Section 1.10 - Mathematical Modeling and Variation

1. Assume that y is directly proportional to x. Use the given x-value and y-value to find a linear model that relates y and x.

$x = 5, y = 24$

a. $y = -\frac{24}{5}x$

b. $y = 24x$

c. $y = -\frac{5}{24}x$

d. $y = \frac{24}{5}x$

e. $y = \frac{5}{24}x$

ANSWER: d
POINTS: 1
REFERENCES: 3.5.35
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 10/7/2014 5:48 AM

2. Assume that y is directly proportional to x. Use the given x-value and y-value to find a linear model that relates y and x.

$x = 2, y = 58$

a. $y = 29x$

b. $y = -29x$

c. $y = 58x$

d. $y = -58x$

e. $y = 29$

ANSWER: a
POINTS: 1
REFERENCES: 3.5.36
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 10/7/2014 7:06 AM

3. Assume that y is directly proportional to x. Use the given x-value and y-value to find a linear model that relates y and x.

$x = 38, y = 2400$

a. $y = \frac{1200}{19}x$

b. $y = -2400x$

c. $y = \frac{19}{1200}x$

d. $y = -\frac{19}{1200}x$

e. $y = -\frac{1200}{19}x$

ANSWER: a
POINTS: 1
REFERENCES: 3.5.37
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 5/18/2015 1:55 AM

4. The simple interest on an investment is directly proportional to the amount of the investment. By investing $2400 in a certain bond issue, you obtained an interest payment of $111.75 after 1 year. Find a mathematical model that gives the interest I for this bond issue after 1 year in terms of the amount invested P. (Round your answer to three decimal places.)

a. $I = 0.047P$

b. $I = 268{,}200P$

c. $I = 21.477P$

d. $I = 2400P$

e. $I = 111.75P$

ANSWER: a
POINTS: 1
REFERENCES: 3.5.39
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 10/14/2014 12:42 AM

5. The simple interest on an investment is directly proportional to the amount of the investment. By investing $5800 in a municipal bond, you obtained an interest payment of $221.25 after 1 year. Find a mathematical model that gives the interest I for this municipal bond after 1 year in terms of the amount invested P. (Round your answer to three decimal places.)

a. $I = 26.215P$

b. $I = 221.25P$

c. $I = 0.038P$

d. $I = 1{,}283{,}250P$

e. $I = 5800P$

ANSWER: c
POINTS: 1
REFERENCES: 3.5.40
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 10/14/2014 12:47 AM

6. On a yardstick with scales in inches and centimeters, you notice that 11 inches is approximately the same length as 33 centimeters. Use this information to find a mathematical model that relates centimeters y to inches x. Then use the model to find the numbers of centimeters in 60 inches and 70 inches. (Round your answer to one decimal place.)

a. Model: $y = \frac{1}{3}x$; 20 cm, 23.3 cm
b. Model: $y = 3x$; 180 cm, 23.3 cm
c. Model: $y = 3x$; 20 cm, 210 cm
d. Model: $y = 3x$; 180 cm, 210 cm
e. Model: $y = \frac{1}{3}x$; 180 cm, 210 cm

ANSWER: d
POINTS: 1
REFERENCES: 3.5.41
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 10/23/2014 1:07 AM

7. When buying gasoline, you notice that 16 gallons of gasoline is approximately the same amount of gasoline as 51 liters. Use this information to find a linear model that relates liters y to gallons x. Then use the model to find the numbers of liters in 25 gallons and 45 gallons.
(Round your answer to one decimal place.)

a. Model: $y = \frac{16}{51}x$; 7.8 L, 14.1 L
b. Model: $y = \frac{51}{16}x$; 79.7 L, 14.1 L
c. Model: $y = \frac{51}{16}x$; 7.8 L, 143.4 L
d. Model: $y = \frac{51}{16}x$; 79.7 L, 143.4 L
e. Model: $y = \frac{16}{51}x$; 79.7 L, 143.4 L

ANSWER: d
POINTS: 1

Section 1.10 - Mathematical Modeling and Variation

REFERENCES: 3.5.42
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 10/23/2014 1:11 AM

8. Property tax is based on the assessed value of a property. A house that has an assessed value of $200,000 has a property tax of $4,820. Find a mathematical model that gives the amount of property tax y in terms of the assessed value x of the property. Use the model to find the property tax on a house that has an assessed value of $230,000. (Round your answer to four decimal places.)

a. $y = 0.0241x;\ \$230{,}000$
b. $y = 0.0241x;\ \$5543$
c. $y = 41.4938x;\ \$5543$
d. $y = 41.4938x;\ \$9{,}543{,}568$
e. $y = 0.0241x;\ \$9{,}543{,}568$

ANSWER: b
POINTS: 1
REFERENCES: 3.5.43
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 10/7/2014 6:01 AM

9. State sales tax is based on retail price. An item that sells for $180.99 has a sales tax of $17.4. Find a mathematical model that gives the amount of sales tax y in terms of the retail price x. Use the model to find the sales tax on a $589.99 purchase. (Round your answer to four decimal places.)

a. $y = 10.4017x;\ \$56.72$
b. $y = 0.0961x;\ \$56.72$
c. $y = 0.0961x;\ \$589.99$
d. $y = 0.0961x;\ \$6{,}137$
e. $y = 10.4017x;\ \$6{,}137$

ANSWER: b
POINTS: 1
REFERENCES: 3.5.44
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
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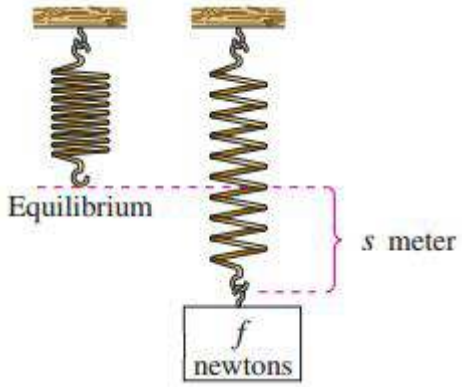
10. A force of $f = 225$ newtons stretches a spring $s = 0.15$ meter (see figure).

Section 1.10 - Mathematical Modeling and Variation



How far will a force of 60 newtons stretch the spring? What force is required to stretch the spring 0.1 meter?

a. 0.15 m; 150 N
b. 0.15 m; 225 N
c. 0.04 m; 150 N
d. 0.09 m; 285 N
e. 0.04 m; 225 N

ANSWER: c
POINTS: 1
REFERENCES: 3.5.45
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
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11. A force of 270 newtons stretches a spring 0.18 meter. What force is required to stretch the spring 0.19 meter?

a. 295 N
b. 290 N
c. 285 N
d. 280 N
e. 270 N

ANSWER: c
POINTS: 1
REFERENCES: 3.5.46
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
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12. The coiled spring of a toy supports the weight of a child. The spring is compressed a distance of 1.6 inches by the weight of a 35-pound child. The toy will not work properly if its spring is compressed more than 6 inches. What is the weight of the heaviest child who should be allowed to use the toy? (Round your answer to

two decimal places.)

a. 136.25 lb
b. 126.25 lb
c. 131.25 lb
d. 35 lb
e. 141.25 lb

ANSWER: c
POINTS: 1
REFERENCES: 3.5.47
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
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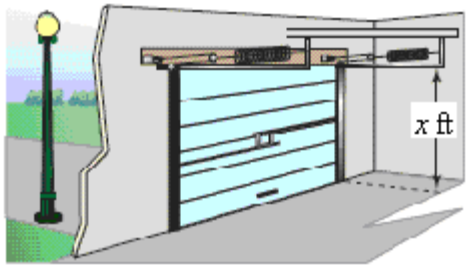
13. An overhead garage door has two springs, one on each side of the door (see figure). A force of 20 pounds is required to stretch each spring 1 foot. Because of a pulley system, the springs stretch only one-half the distance the door travels. The door moves a total of $x = 18$ feet, and the springs are at their natural length when the door is open. Find the combined lifting force applied to the door by the springs when the door is closed.



a. Combined lifting force $= 2F = 356$ lb
b. Combined lifting force $= 2F = 360$ lb
c. Combined lifting force $= 2F = 362$ lb
d. Combined lifting force $= 2F = 358$ lb
e. Combined lifting force $= 2F = 364$ lb

ANSWER: b
POINTS: 1
REFERENCES: 3.5.48
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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14. Find a mathematical model representing the statement. (Determine the constant of proportionality.)

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y is inversely proportional to x. $(y = 7 \text{ when } x = 5.)$

a. $y = \frac{5}{x}$

b. $y = \frac{x}{35}$

c. $y = 35x$

d. $y = \frac{35}{x}$

e. $y = \frac{7}{x}$

ANSWER: d
POINTS: 1
REFERENCES: 3.5.69
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
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15. Find a mathematical model representing the statement. (Determine the constant of proportionality.)

y varies inversely as x. $(y = 9 \text{ when } x = 45.)$

a. $y = \frac{9}{x}$

b. $y = \frac{405}{x}$

c. $y = \frac{x}{405}$

d. $y = \frac{45}{x}$

e. $y = 405x$

ANSWER: b
POINTS: 1
REFERENCES: 3.5.68
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
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16. Find a mathematical model representing the statement. (Determine the constant of proportionality.)

z varies jointly as x and y. $(z = 128 \text{ when } x = 4 \text{ and } y = 8.)$

a. $z = \frac{4y}{x}$

b. $z = \frac{4}{xy}$

c. $z = \frac{xy}{4}$

d. $z = \frac{4x}{y}$

e. $z = 4xy$

ANSWER: e
POINTS: 1
REFERENCES: 3.5.70
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 10/14/2014 2:45 AM

17. Find a mathematical model representing the statement. (Determine the constant of proportionality.)

F is jointly proportional to r and the third power of s. $(F = 24750 \text{ when } r = 18 \text{ and } s = 5.)$

a. $F = \frac{11r}{s^3}$

b. $F = \frac{rs^3}{11}$

c. $F = 11rs^3$

d. $F = \frac{11}{rs^3}$

e. $F = \frac{11s^3}{r}$

ANSWER: c
POINTS: 1
REFERENCES: 3.5.71
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 10/14/2014 2:51 AM

18. Find a mathematical model representing the statement. (Determine the constant of proportionality.)

P varies directly as x and inversely as the square of y. ($P = \frac{3}{2}$ when $x = 25$ and $y = 10$.)

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a. $P = \frac{xy^2}{6}$

b. $P = \frac{6x}{y}$

c. $P = \frac{6x}{y^2}$

d. $P = \frac{6y^2}{x}$

e. $P = 6xy^2$

ANSWER: c
POINTS: 1
REFERENCES: 3.5.72
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
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19. The work W (in joules) done when lifting an object varies jointly with the mass m (in kilograms) of the object and the height h (in meters) that the object is lifted. The work done when a 120-kilogram object is lifted 1.8 meters is 2116.8 joules. How much work is done when lifting a 200-kilogram object 1.5 meters?

a. 2960 J
b. 2920 J
c. 2940 J
d. 2950 J
e. 2930 J

ANSWER: c
POINTS: 1
REFERENCES: 3.5.79
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
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20. Assume that y is directly proportional to x. Use the given x-value and y-value to find a linear model that relates y and x.

$x = 5, y = 380$

a. $y = 76x$
b. $y = -76x$
c. $y = \frac{1}{76}x$

d. $y = -\frac{1}{76}x$

e. $y = -380x$

ANSWER: a
POINTS: 1
REFERENCES: 3.5.38
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
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21. Determine whether the variation model is of the form $y = kx$ or $y = \frac{k}{x}$ and find k. Then write a model that relates y and x.

x	4	8	12	16	20
y	1	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{4}$	$\frac{1}{5}$

a. $y = 4x$

b. $y = \frac{1}{x}$

c. $y = \frac{4}{x}$

d. $y = x$

e. $y = \frac{x}{4}$

ANSWER: c
POINTS: 1
REFERENCES: 3.5.31
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 5/18/2015 4:56 AM

22. Determine whether the variation model is of the form $y = kx$ or $y = \frac{k}{x}$ and find k. Then write a model that relates y and x.

x	9	18	27	36	45
y	2	4	6	8	10

a. $y = \frac{2}{9}x$

b. $y = \frac{9}{x}$

c. $y = \frac{2}{9x}$

d. $y = \frac{9}{2x}$

e. $y = \frac{9}{2}x$

ANSWER: a
POINTS: 1
REFERENCES: 3.5.32
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 10/23/2014 1:54 AM

23. Determine whether the variation model is of the form $y = kx$ or $y = \frac{k}{x}$ and find k. Then write a model that relates y and x.

x	5	10	15	20	25
y	–1.5	–3	–4.5	–6	–7.5

a. $y = -\frac{3}{10x}$

b. $y = \frac{10}{3}x$

c. $y = -\frac{3}{10}x$

d. $y = \frac{3}{10}x$

e. $y = -\frac{10}{3}x$

ANSWER: c
POINTS: 1
REFERENCES: 3.5.33
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 10/23/2014 1:56 AM

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24. Determine whether the variation model is of the form $y = kx$ or $y = \frac{k}{x}$ and find k. Then write a model that relates y and x.

x	5	10	15	20	25
y	26	13	$\frac{26}{3}$	$\frac{13}{2}$	$\frac{26}{5}$

a. $y = \frac{130}{x}$

b. $y = \frac{x}{130}$

c. $y = \frac{1}{x}$

d. $y = 130x$

e. $y = x$

ANSWER: a
POINTS: 1
REFERENCES: 3.5.34
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
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25. Use the given value of k to complete the table for the direct variation model $y = kx^2$.

Plot the points on a rectangular coordinate system.

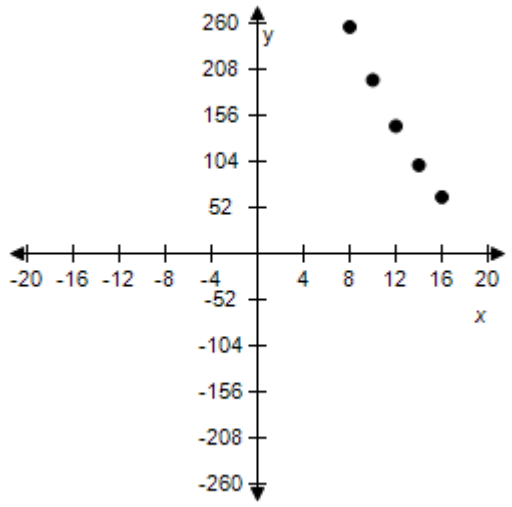
x	8	10	12	14	16
$y = kx^2$					

$k = 1$

a.

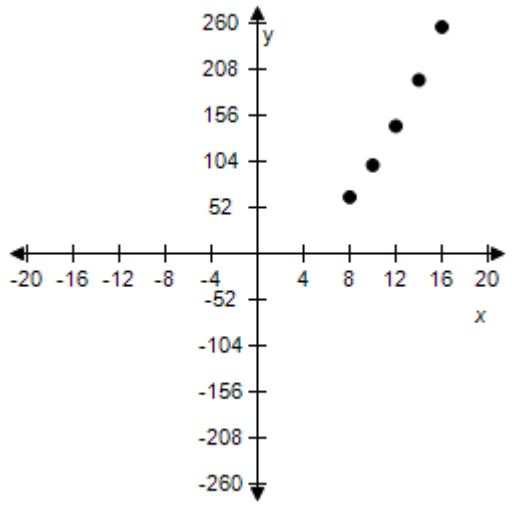
x	8	10	12	14	16
$y = kx^2$	256	196	144	100	64

Section 1.10 - Mathematical Modeling and Variation



b.

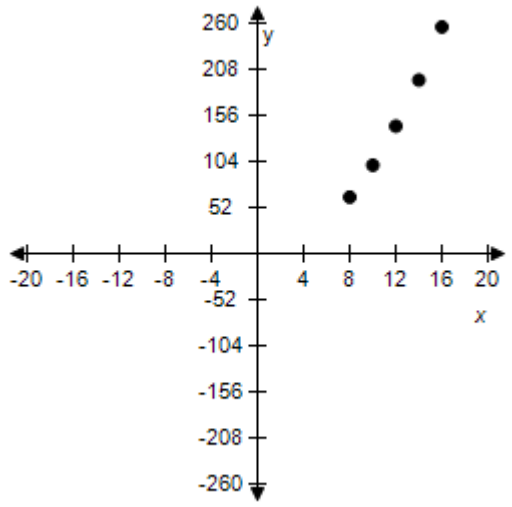
x	8	10	12	14	16
$y = kx^2$	64	100	144	196	256



c.

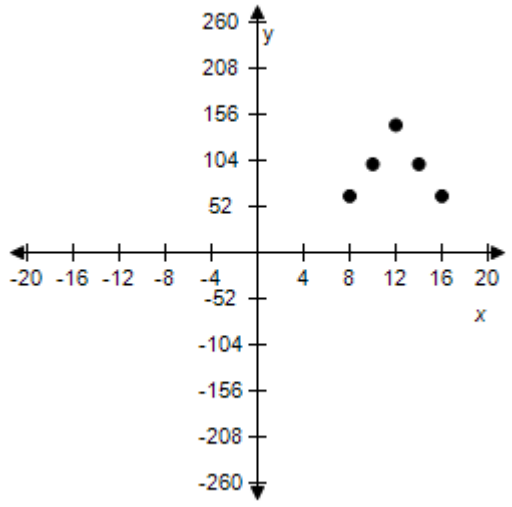
x	8	10	12	14	16
$y = kx^2$	64	64	64	64	64

Section 1.10 - Mathematical Modeling and Variation



d.

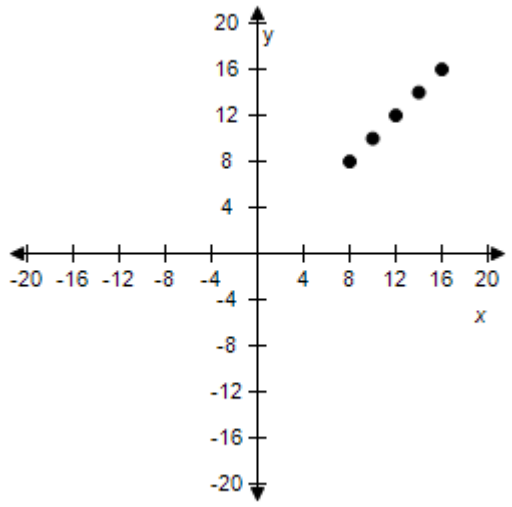
x	8	10	12	14	16
$y = kx^2$	64	100	144	100	64



e.

x	8	10	12	14	16
$y = kx^2$	8	10	12	14	16

Section 1.10 - Mathematical Modeling and Variation



ANSWER: b
POINTS: 1
REFERENCES: 3.5.23
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 10/22/2014 11:56 PM
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26. Use the given value of k to complete the table for the direct variation model

$y = kx^2$.

Plot the points on a rectangular coordinate system.

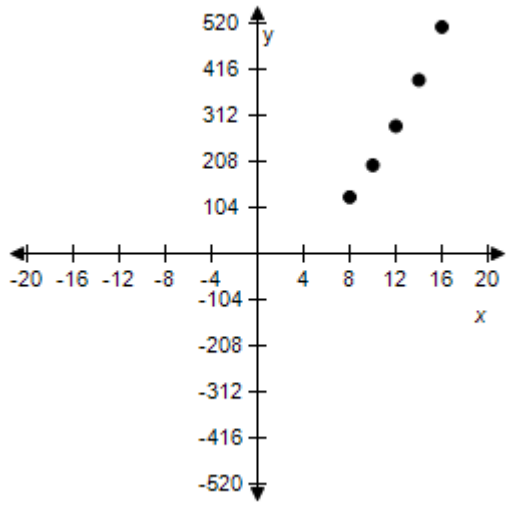
x	8	10	12	14	16
$y = kx^2$					

$k = 2$

a.

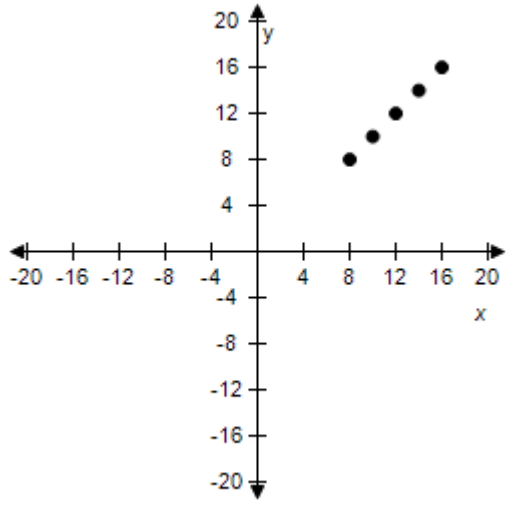
x	8	10	12	14	16
$y = kx^2$	128	200	288	392	512

Section 1.10 - Mathematical Modeling and Variation



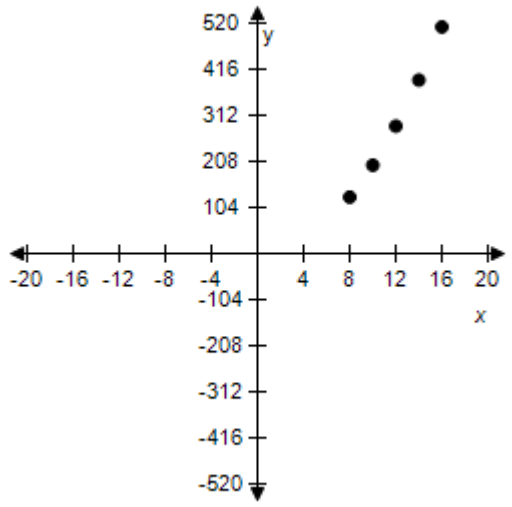
b.

x	8	10	12	14	16
$y = kx^2$	8	10	12	14	16



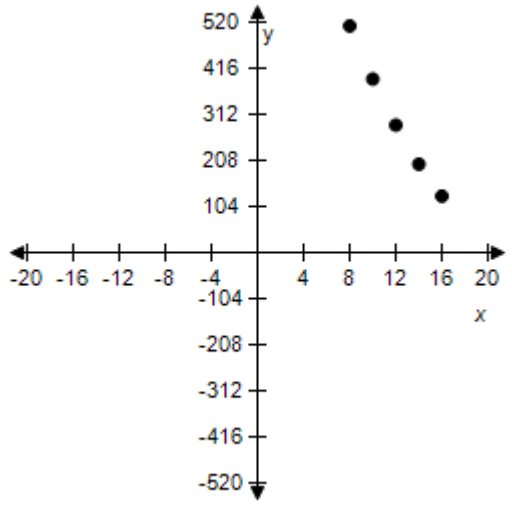
c.

x	8	10	12	14	16
$y = kx^2$	128	128	128	128	128



d.

x	8	10	12	14	16
$y = kx^2$	512	392	288	200	128



e.

x	8	10	12	14	16
$y = kx^2$	128	200	288	200	128

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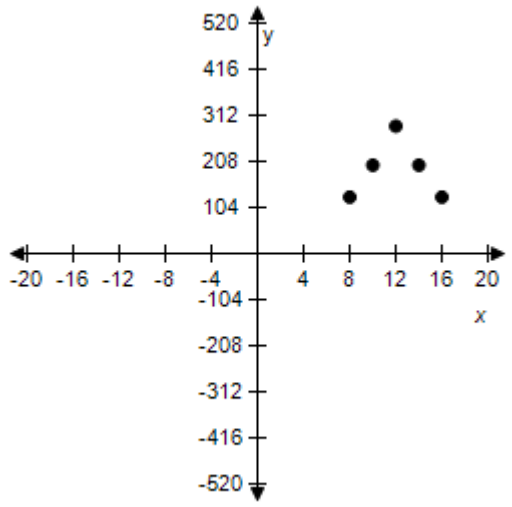


ANSWER: a
POINTS: 1
REFERENCES: 3.5.24
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 10/22/2014 11:38 PM
DATE MODIFIED: 5/18/2015 11:42 PM

27. Use the given value of k to complete the table for the direct variation model

$y = kx^2$.

Plot the points on a rectangular coordinate system.

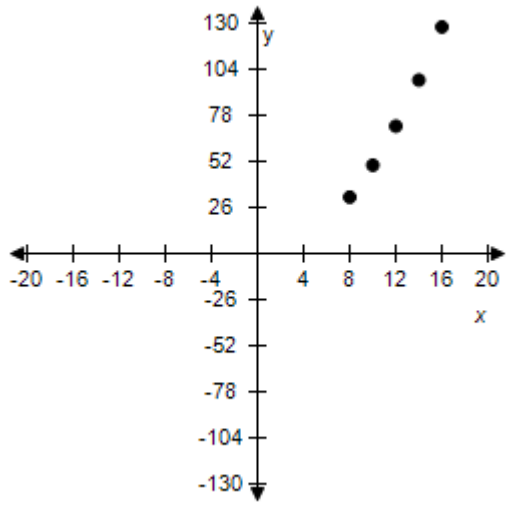
x	8	10	12	14	16
$y = kx^2$					

$k = \frac{1}{2}$

a.

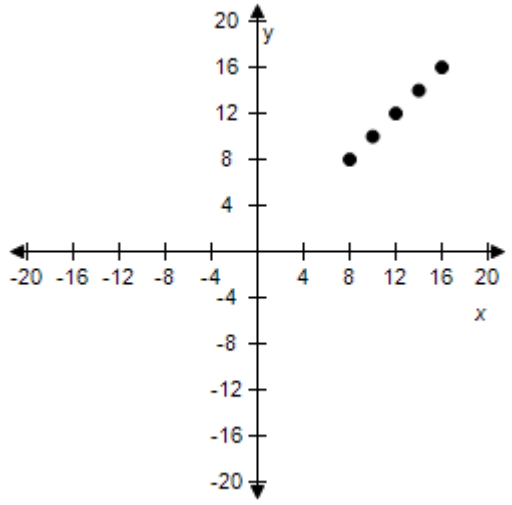
x	8	10	12	14	16
$y = kx^2$	32	50	72	98	128

Section 1.10 - Mathematical Modeling and Variation



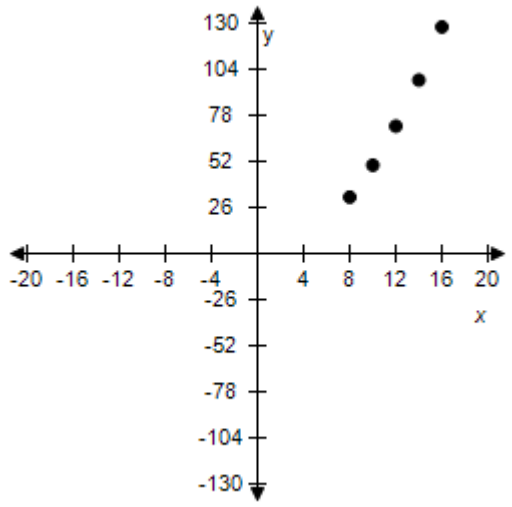
b.

x	8	10	12	14	16
$y = kx^2$	8	10	12	14	16



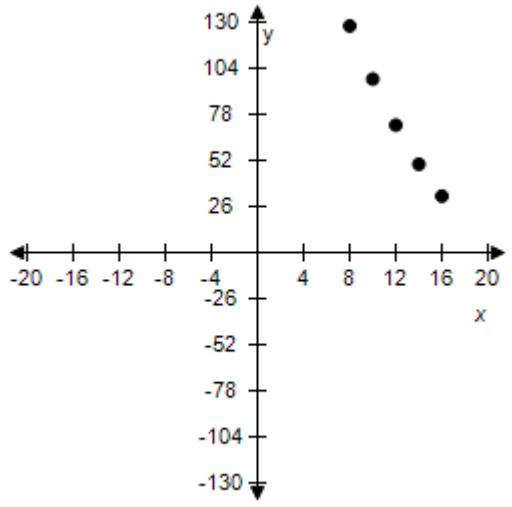
c.

x	8	10	12	14	16
$y = kx^2$	32	32	32	32	32



d.

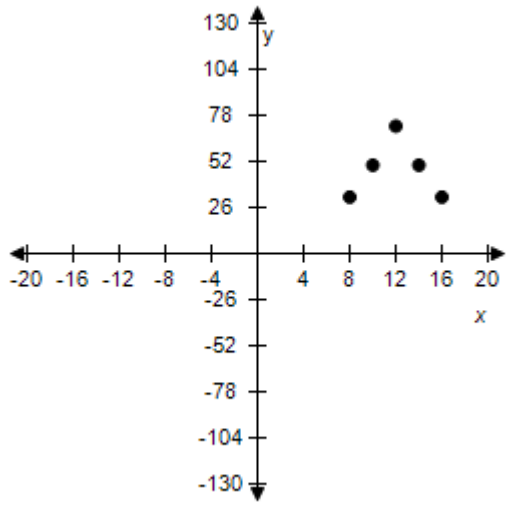
x	8	10	12	14	16
$y = kx^2$	128	98	72	50	32



e.

x	8	10	12	14	16
$y = kx^2$	32	50	72	50	32

Section 1.10 - Mathematical Modeling and Variation



ANSWER: a
POINTS: 1
REFERENCES: 3.5.25
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 10/22/2014 8:07 AM
DATE MODIFIED: 5/18/2015 11:42 PM

28. Use the given value of k to complete the table for the direct variation model

$y = kx^2$.

Plot the points on a rectangular coordinate system.

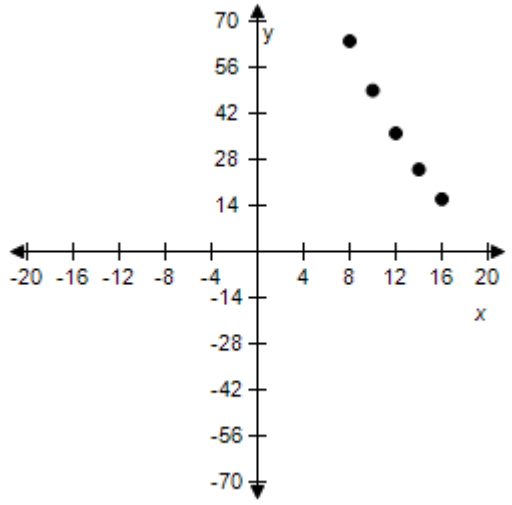
x	8	10	12	14	16
$y = kx^2$					

$k = \frac{1}{4}$

a.

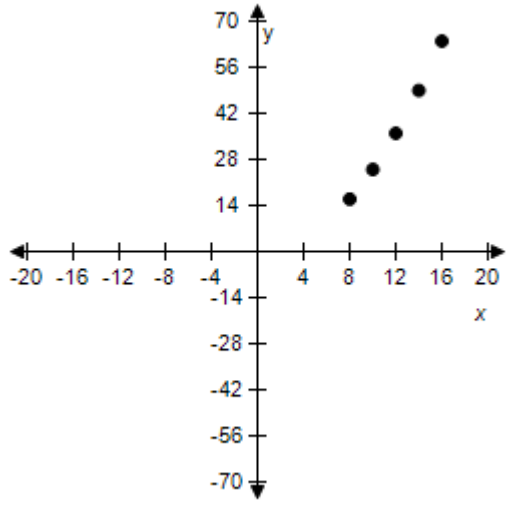
x	8	10	12	14	16
$y = kx^2$	64	49	36	25	16

Section 1.10 - Mathematical Modeling and Variation



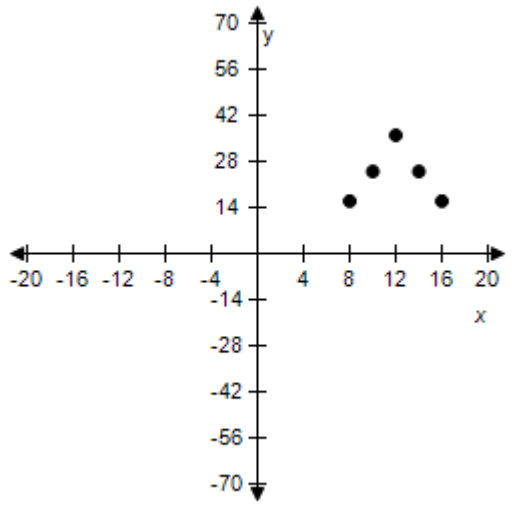
b.

x	8	10	12	14	16
$y = kx^2$	16	16	16	16	16



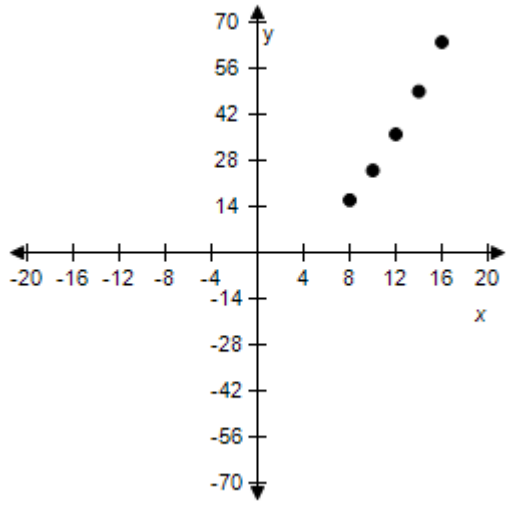
c.

x	8	10	12	14	16
$y = kx^2$	16	25	36	25	16



d.

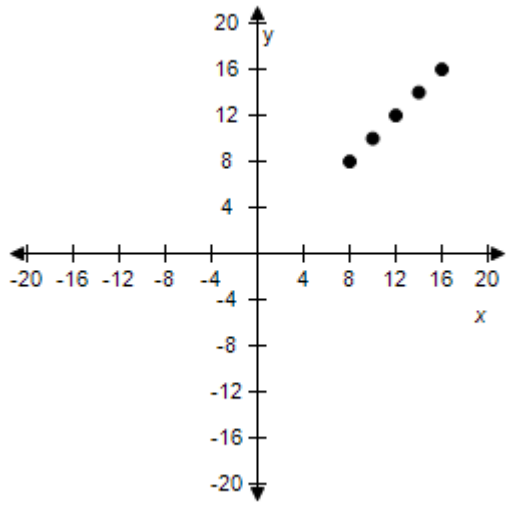
x	8	10	12	14	16
$y = kx^2$	16	25	36	49	64



e.

x	8	10	12	14	16
$y = kx^2$	8	10	12	14	16

Section 1.10 - Mathematical Modeling and Variation



ANSWER: d
POINTS: 1
REFERENCES: 3.5.26
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 10/22/2014 6:50 AM
DATE MODIFIED: 5/18/2015 11:43 PM

29. Use the given value of k to complete the table for the inverse variation model

$$y = \frac{k}{x^2}$$

Plot the points on a rectangular coordinate system.

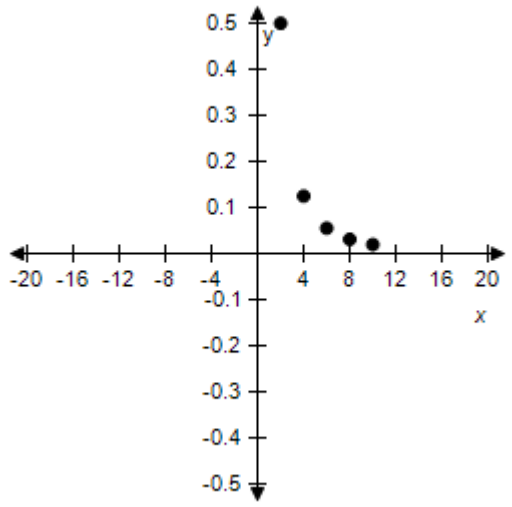
x	2	4	6	8	10
$y = \frac{k}{x^2}$					

$k = 2$

a.

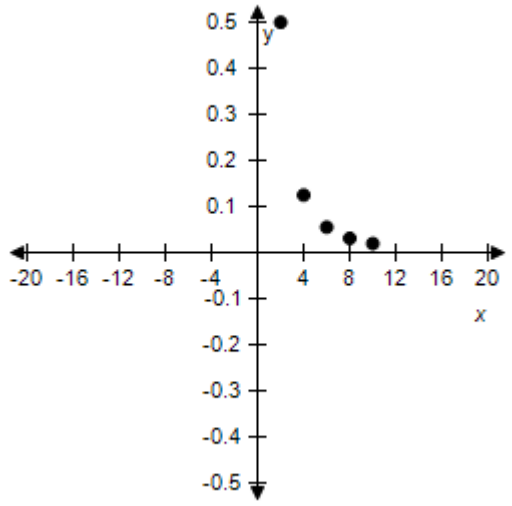
x	2	4	6	8	10
$y = \frac{k}{x^2}$	$\frac{1}{2}$	$\frac{1}{8}$	$\frac{1}{18}$	$\frac{1}{32}$	$\frac{1}{50}$

Section 1.10 - Mathematical Modeling and Variation



b.

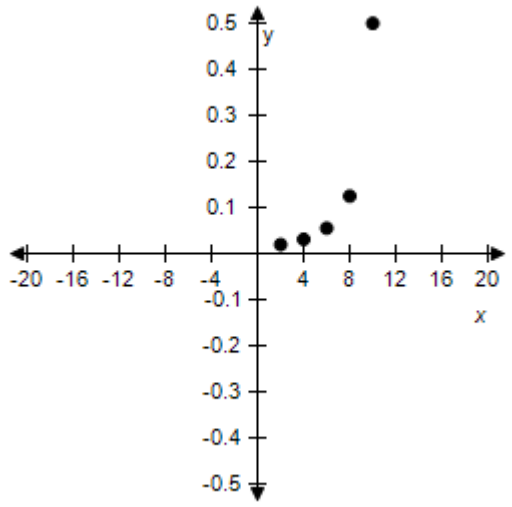
x	2	4	6	8	10
$y = \frac{k}{x^2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$



c.

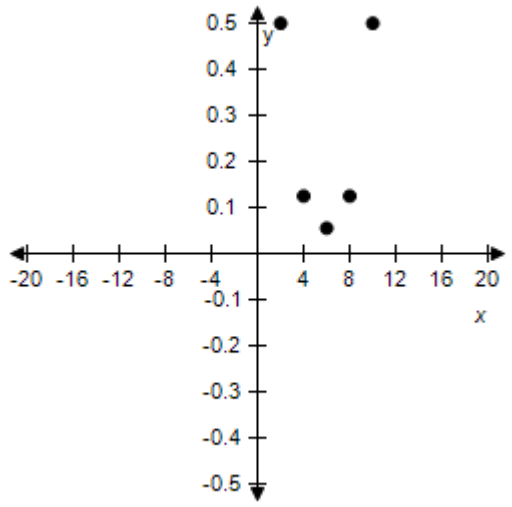
x	2	4	6	8	10
$y = \frac{k}{x^2}$	$\frac{1}{50}$	$\frac{1}{32}$	$\frac{1}{18}$	$\frac{1}{8}$	$\frac{1}{2}$

Section 1.10 - Mathematical Modeling and Variation



d.

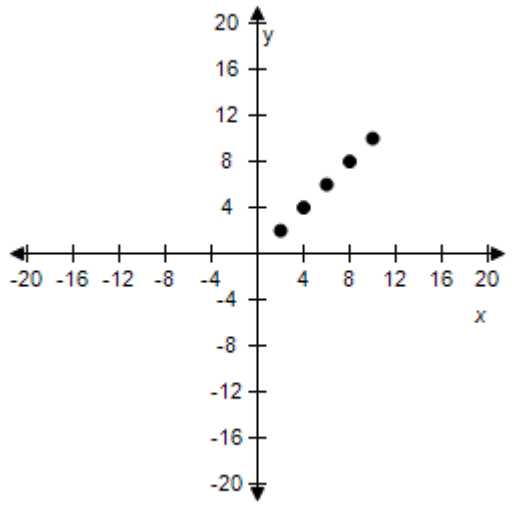
x	2	4	6	8	10
$y = kx^2$	$\frac{1}{2}$	$\frac{1}{8}$	$\frac{1}{18}$	$\frac{1}{8}$	$\frac{1}{2}$



e.

x	2	4	6	8	10
$y = \frac{k}{x^2}$	2	4	6	8	10

Section 1.10 - Mathematical Modeling and Variation



ANSWER: a
POINTS: 1
REFERENCES: 3.5.27
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 10/22/2014 5:52 AM
DATE MODIFIED: 5/19/2015 1:10 AM

30. Use the given value of k to complete the table for the inverse variation model

$$y = \frac{k}{x^2}$$

Plot the points on a rectangular coordinate system.

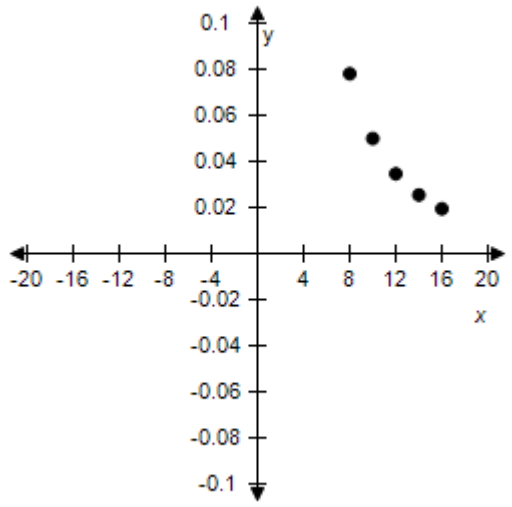
x	8	10	12	14	16
$y = \frac{k}{x^2}$					

$k = 5$

a.

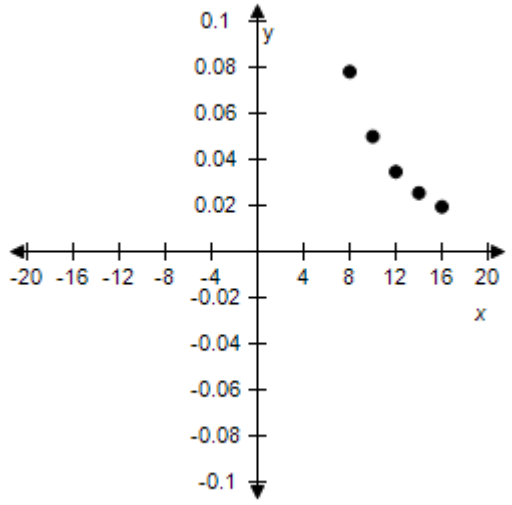
x	8	10	12	14	16
$y = \frac{k}{x^2}$	$\frac{5}{64}$	$\frac{1}{20}$	$\frac{5}{144}$	$\frac{5}{196}$	$\frac{5}{256}$

Section 1.10 - Mathematical Modeling and Variation



b.

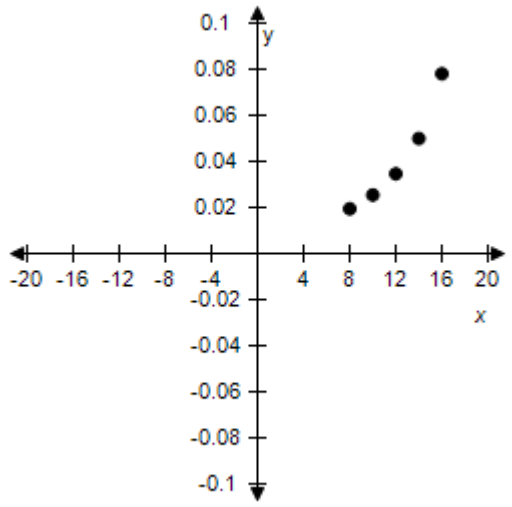
x	8	10	12	14	16
$y = \frac{k}{x^2}$	$\frac{5}{64}$	$\frac{5}{64}$	$\frac{5}{64}$	$\frac{5}{64}$	$\frac{5}{64}$



c.

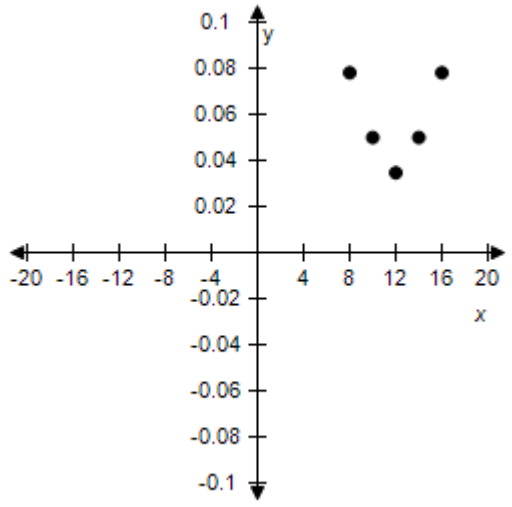
x	8	10	12	14	16
$y = \frac{k}{x^2}$	$\frac{5}{256}$	$\frac{5}{196}$	$\frac{5}{144}$	$\frac{1}{20}$	$\frac{5}{64}$

Section 1.10 - Mathematical Modeling and Variation



d.

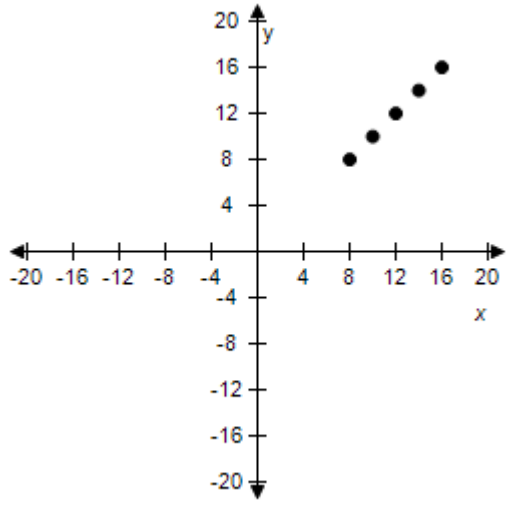
x	8	10	12	14	16
$y = \frac{k}{x^2}$	$\frac{5}{64}$	$\frac{1}{20}$	$\frac{5}{144}$	$\frac{1}{20}$	$\frac{5}{64}$



e.

x	8	10	12	14	16
$y = \frac{k}{x^2}$	8	10	12	14	16

Section 1.10 - Mathematical Modeling and Variation



ANSWER: a
POINTS: 1
REFERENCES: 3.5.28
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 10/22/2014 4:52 AM
DATE MODIFIED: 5/19/2015 1:08 AM

31. Use the given value of k to complete the table for the inverse variation model

$$y = \frac{k}{x^2}$$

Plot the points on a rectangular coordinate system.

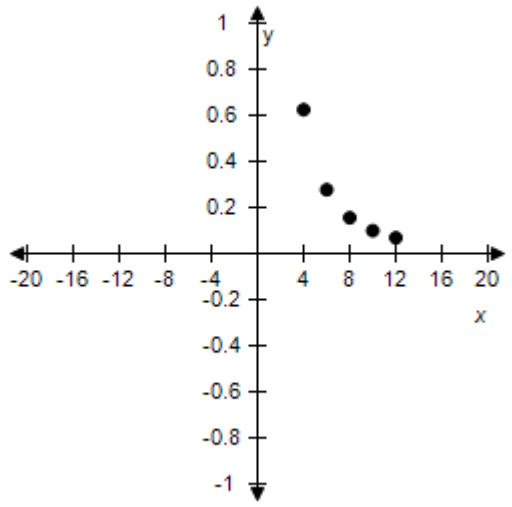
x	4	6	8	10	12
$y = \frac{k}{x^2}$					

$k = 10$

a.

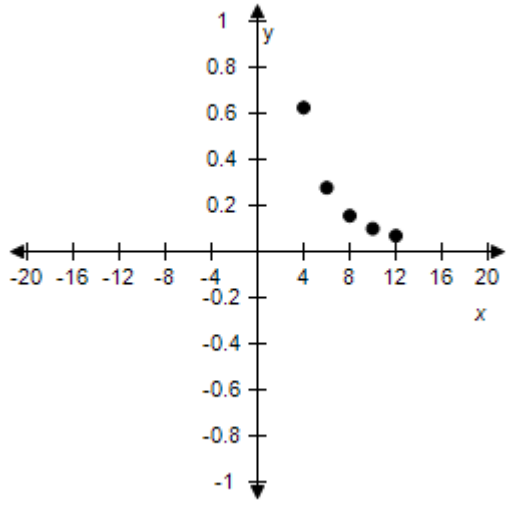
x	4	6	8	10	12
$y = \frac{k}{x^2}$	$\frac{5}{8}$	$\frac{5}{18}$	$\frac{5}{32}$	$\frac{1}{10}$	$\frac{5}{72}$

Section 1.10 - Mathematical Modeling and Variation



b.

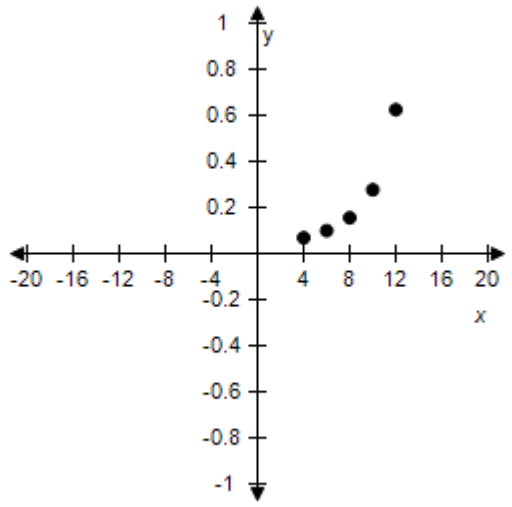
x	4	6	8	10	12
$y = \frac{k}{x^2}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{5}{8}$



c.

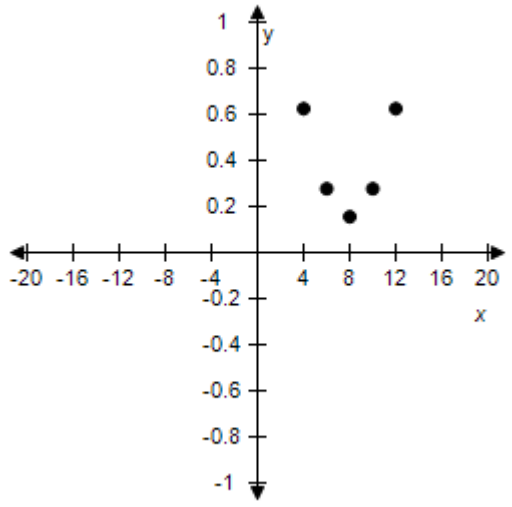
x	4	6	8	10	12
$y = \frac{k}{x^2}$	$\frac{5}{72}$	$\frac{1}{10}$	$\frac{5}{32}$	$\frac{5}{18}$	$\frac{5}{8}$

Section 1.10 - Mathematical Modeling and Variation



d.

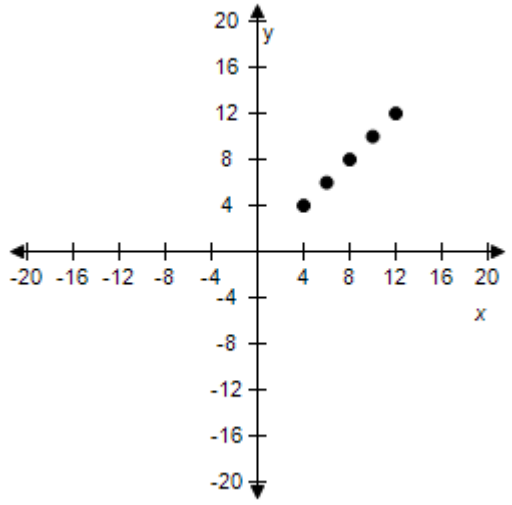
x	4	6	8	10	12
$y = \frac{k}{x^2}$	$\frac{5}{8}$	$\frac{5}{18}$	$\frac{5}{32}$	$\frac{5}{18}$	$\frac{5}{8}$



e.

x	4	6	8	10	12
$y = \frac{k}{x^2}$	4	6	8	10	12

Section 1.10 - Mathematical Modeling and Variation



ANSWER: a
POINTS: 1
REFERENCES: 3.5.29
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 5/19/2015 12:55 AM

32. Use the given value of k to complete the table for the inverse variation model

$$y = \frac{k}{x^2}.$$

Plot the points on a rectangular coordinate system.

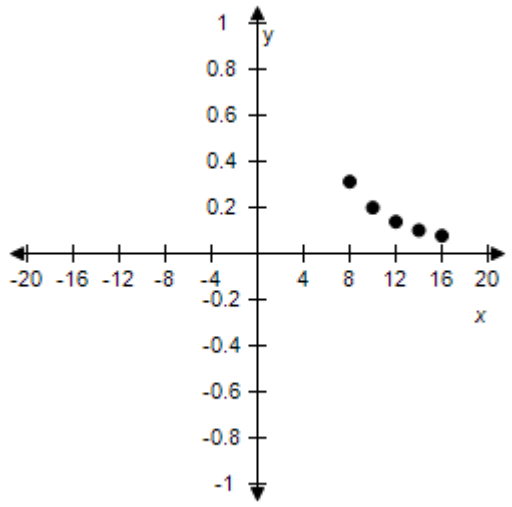
x	8	10	12	14	16
$y = \frac{k}{x^2}$					

$k = 20$

a.

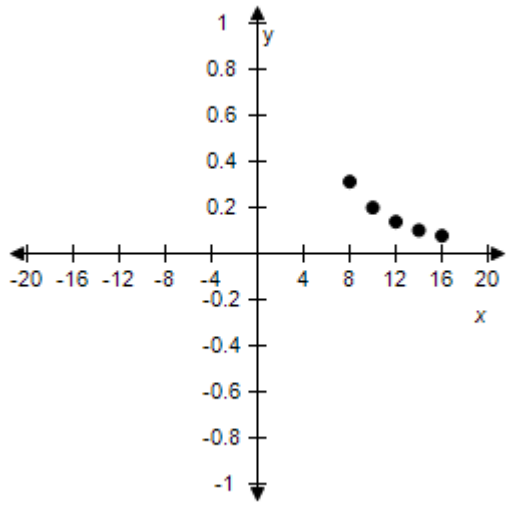
x	8	10	12	14	16
$y = \frac{k}{x^2}$	$\frac{5}{16}$	$\frac{1}{5}$	$\frac{5}{36}$	$\frac{5}{49}$	$\frac{5}{64}$

Section 1.10 - Mathematical Modeling and Variation



b.

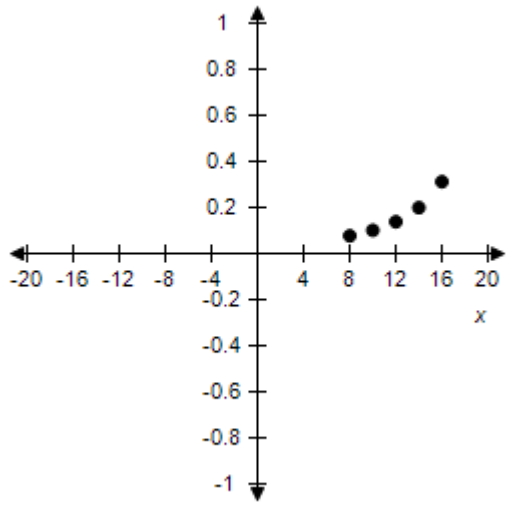
x	8	10	12	14	16
$y = \frac{k}{x^2}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$



c.

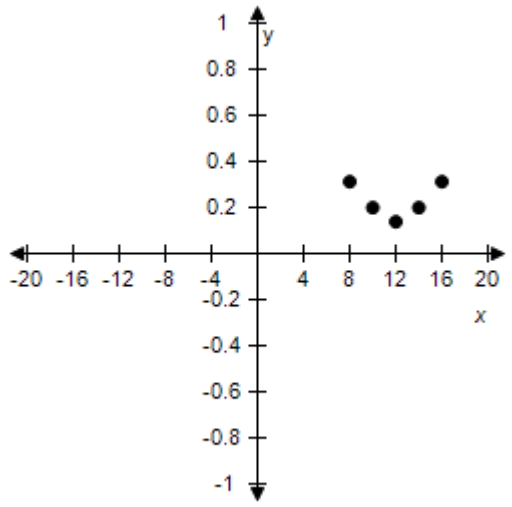
x	8	10	12	14	16
$y = \frac{k}{x^2}$	$\frac{5}{64}$	$\frac{5}{49}$	$\frac{5}{36}$	$\frac{1}{5}$	$\frac{5}{16}$

Section 1.10 - Mathematical Modeling and Variation



d.

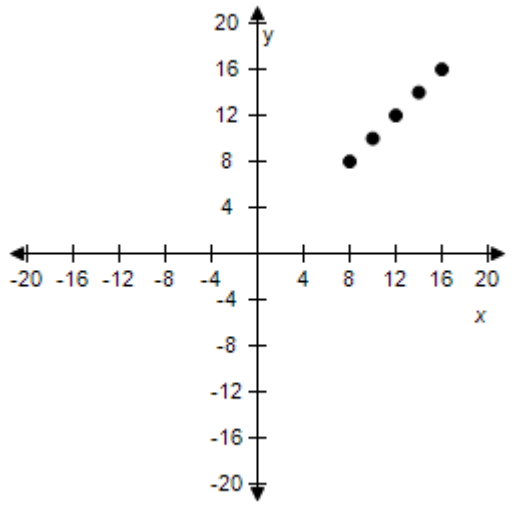
x	8	10	12	14	16
$y = kx^2$	$\frac{5}{16}$	$\frac{1}{5}$	$\frac{5}{36}$	$\frac{1}{5}$	$\frac{5}{16}$



e.

x	8	10	12	14	16
$y = \frac{k}{x^2}$	8	10	12	14	16

Section 1.10 - Mathematical Modeling and Variation



ANSWER: a
POINTS: 1
REFERENCES: 3.5.30
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 5/19/2015 1:00 AM

33. Find a mathematical model representing the statement. (Determine the constant of proportionality.)

z varies directly as the square of x and inversely as y. ($z = 36$ when $x = 9$ and $y = 3$.)

a. $z = \dfrac{3x^2}{4y}$

b. $z = \dfrac{4x}{3y}$

c. $z = \dfrac{4x^2}{3y}$

d. $z = -\dfrac{3x^2}{4y}$

e. $z = -\dfrac{4x^2}{3y}$

ANSWER: c
POINTS: 1
REFERENCES: 3.5.73
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM

Section 1.10 - Mathematical Modeling and Variation

DATE MODIFIED: 10/21/2014 3:15 AM

34. Find a mathematical model representing the statement. (Determine the constant of proportionality.)

v varies jointly as p and q and inversely as the square of s. ($v = 1.4$ when $p = 4.4$, $q = 7.3$ and $s = 1.8$.)

a. $v = \dfrac{0.141p}{qs^2}$

b. $v = -\dfrac{pq}{0.141s^2}$

c. $v = \dfrac{0.141pq}{s^2}$

d. $v = \dfrac{pq}{0.141s^2}$

e. $v = -\dfrac{0.141pq}{s^2}$

ANSWER: c
POINTS: 1
REFERENCES: 3.5.74
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 10/21/2014 4:00 AM

35. Use the fact that the diameter of the largest particle that can be moved by a stream varies approximately directly as the square of the velocity of the stream.

A stream with a velocity of $\frac{1}{5}$ mile per hour can move coarse sand particles about 0.07 inch in diameter.

Approximate the velocity required to carry particles 0.2 inch in diameter. (Round your answer to two decimal places.)

a. About 0.84 mi/h
b. About 0.19 mi/h
c. About –0.16 mi/h
d. About 0.49 mi/h
e. About 0.34 mi/h

ANSWER: e
POINTS: 1
REFERENCES: 3.5.75
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 10/23/2014 2:18 AM

Section 1.10 - Mathematical Modeling and Variation

36. Use the fact that the resistance of a wire carrying an electrical current is directly proportional to its length and inversely proportional to its cross-sectional area.

If #28 copper wire (which has a diameter of 0.0126 inch) has a resistance of 68.17 ohms per thousand feet, what length of #28 copper wire will produce a resistance of 30.5 ohms?

a. About 447 ft
b. About 442 ft
c. About 432 ft
d. About 452 ft
e. About 462 ft

ANSWER: a
POINTS: 1
REFERENCES: 3.5.77
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 10/23/2014 2:44 AM

37. Use the fact that the resistance of a wire carrying an electrical current is directly proportional to its length and inversely proportional to its cross-sectional area.

A 10-foot piece of copper wire produces a resistance of 0.2 ohm. Use the constant of proportionality $k = 0.000833$ to find the diameter of the wire.

(Round the answer up to three decimal places.)

a. 0.23 ft
b. 0.58 ft
c. 0.38 ft
d. 0.48 ft
e. 0.73 ft

ANSWER: a
POINTS: 1
REFERENCES: 3.5.78
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 10/23/2014 3:33 AM

38. The frequency of vibrations of a piano string varies directly as the square root of the tension on the string and inversely as the length of the string. The middle A string has a frequency of 430 vibrations per second. Find the frequency of a string that has 1.25 times as much tension and is 1.4 times as long.

a. 373.4 vibrations / sec
b. 343.4 vibrations / sec

c. 353.4 vibrations / sec
d. 383.4 vibrations / sec
e. 363.4 vibrations / sec

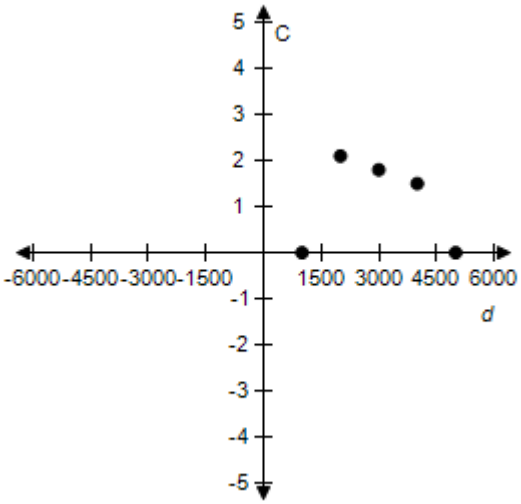
ANSWER: b
POINTS: 1
REFERENCES: 3.5.80
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 10/21/2014 2:38 AM

39. An oceanographer took readings of the water temperatures C (in degrees Celsius) at several depths d (in meters). The data collected are shown in the table.

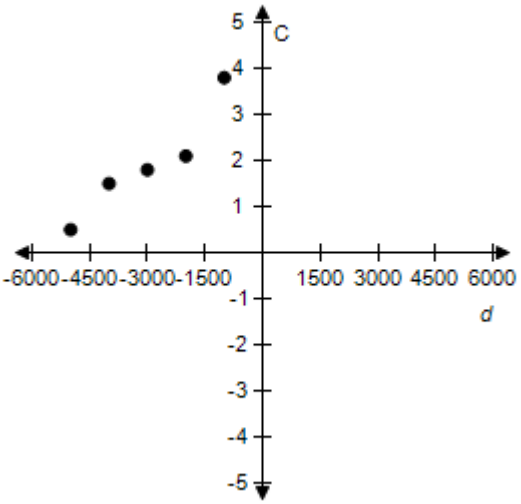
Depth, d	Temperature, C
1000	3.8°
2000	2.1°
3000	1.8°
4000	1.5°
5000	0.5°

Sketch a scatter plot of the data.

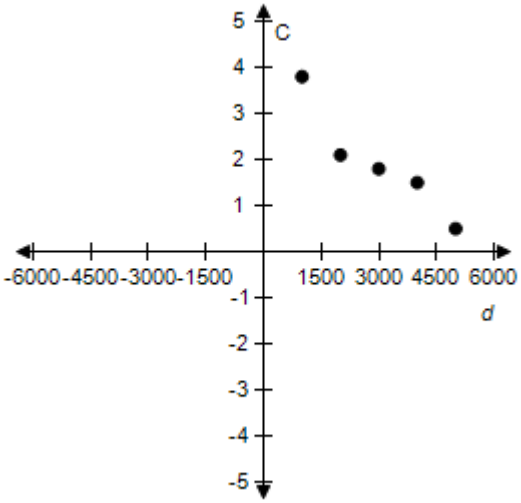
a.



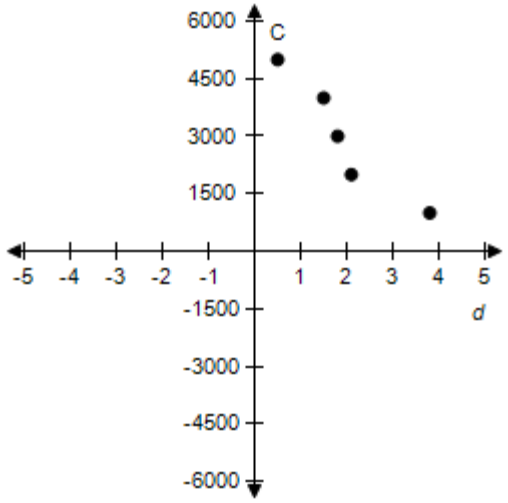
b.



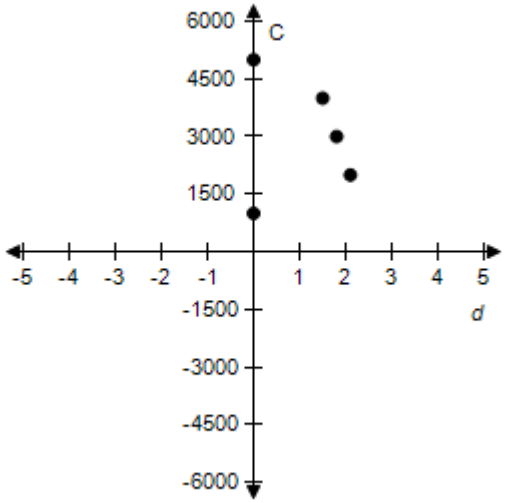
c.



d.



e.



ANSWER: c
POINTS: 1
REFERENCES: 3.5.83a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 10/23/2014 3:46 AM

40. Determine whether the variation model below is of the form $y = kx$ or $y = \frac{k}{x}$.

x	13	26	39	52	65
y	3	6	9	12	15

Section 1.10 - Mathematical Modeling and Variation

a. $y = kx$ b. $y = \frac{k}{x}$

ANSWER: a
POINTS: 1
REFERENCES: 3.5.31
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 10/23/2014 12:36 AM

41. After determining whether the variation model below is of the form $y = kx$ or $y = \frac{k}{x}$, find the value of k.

x	154	161	168	175	182
y	66	69	72	75	78

a. $k = 7$

b. $k = \frac{7}{3}$

c. $k = \frac{1}{7}$

d. $k = \frac{3}{7}$

e. $k = \frac{7}{66}$

ANSWER: d
POINTS: 1
REFERENCES: 3.5.32
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 5/19/2015 1:16 AM

42. After determining whether the variation model below is of the form $y = kx$ or $y = \frac{k}{x}$, find the value of k.

x	20	40	60	80	100
y	$\frac{1}{30}$	$\frac{1}{60}$	$\frac{1}{90}$	$\frac{1}{120}$	$\frac{1}{150}$

a. $k = \frac{1}{20}$

b. $k = \frac{3}{2}$

c. $k = \frac{5}{4}$

d. $k = \frac{1}{10}$

e. $k = \frac{2}{3}$

ANSWER: e
POINTS: 1
REFERENCES: 3.5.33
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 5/19/2015 1:15 AM

43. Determine whether the variation model below is of the form $y = kx$ or $y = \frac{k}{x}$.

x	12	24	36	48	60
y	$\frac{1}{18}$	$\frac{1}{36}$	$\frac{1}{54}$	$\frac{1}{72}$	$\frac{1}{90}$

a. $y = kx$ b. $y = \frac{k}{x}$

ANSWER: b
POINTS: 1
REFERENCES: 3.5.34
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 10/23/2014 12:31 AM

44. Assume that y is directly proportional to x. If $x = 28$ and $y = 21$, determine a linear model that relates y and x.

a. $y = \frac{3}{5}x$

b. $y = \frac{4}{3}x$

c. $y = \frac{3}{4}x$

d. $y = \frac{2}{3}x$

e. $y = \frac{3}{2}x$

ANSWER: c
POINTS: 1
REFERENCES: 3.5.36

Section 1.10 - Mathematical Modeling and Variation

QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 10/21/2014 7:10 AM

45. The simple interest on an investment is directly proportional to the amount of the investment. By investing $6000 in a certain certificate of deposit, you obtained an interest payment of $276.00 after 1 year. Determine a mathematical model that gives the interest, I, for this CD after 1 year in terms of the amount invested, P.

a. $I = (0.050)P$

b. $I = (0.041)P$

c. $I = (0.049)P$

d. $I = (0.046)P$

e. $I = (0.044)P$

ANSWER: d
POINTS: 1
REFERENCES: 3.5.39
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 10/21/2014 7:13 AM

46. The sales tax on an item with a retail price of $972 is $68.04. Create a variational model that gives the retail price, y, in terms of the sales tax, x, and use it to determine the retail price of an item that has a sales tax of $82.62.

a. $1182.28

b. $1151.92

c. $1180.29

d. $1192.52

e. $1124.60

ANSWER: c
POINTS: 1
REFERENCES: 3.5.44
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 10/21/2014 7:15 AM

47. Hooke's law states that the magnitude of force, F, required to stretch a spring x units beyond its natural length is directly proportional to x. If a force of 3 pounds stretches a spring from its natural length of 10 inches to a length of 10.7 inches, what force will stretch the spring to a length of 11.5 inches? Round your answer to the nearest hundredth.

a. $F = 5.52$

b. $F = 6.43$

c. $F = 5.70$

d. $F = 7.29$

e. $F = 6.14$

ANSWER: b
POINTS: 1
REFERENCES: 3.5.45b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 10/21/2014 11:49 PM

48. Find a mathematical model for the verbal statement:

"Q is jointly proportional to the cube of h and the square root of m."

a. $Q = kh^3\sqrt{m}$

b. $Q = k\sqrt{h^3m}$

c. $Q = kh^2\sqrt[3]{m}$

d. $Q = k\sqrt[3]{hm^2}$

e. $Q = k\sqrt[3]{hm}$

ANSWER: a
POINTS: 1
REFERENCES: 3.5.57
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: False
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 10/23/2014 12:21 AM

49. Find a mathematical model for the verbal statement:
"m varies directly as the square of w and inversely as s."

a. $m = k\left(\frac{w}{s}\right)^2$

b. $m = \frac{kw^2}{s}$

c. $m = kw^2s$

d. $m = kws^2$

Section 1.10 - Mathematical Modeling and Variation

e. $m = k\left(\frac{s}{w}\right)^2$

ANSWER: b
POINTS: 1
REFERENCES: 3.5.53
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 10/23/2014 4:50 AM

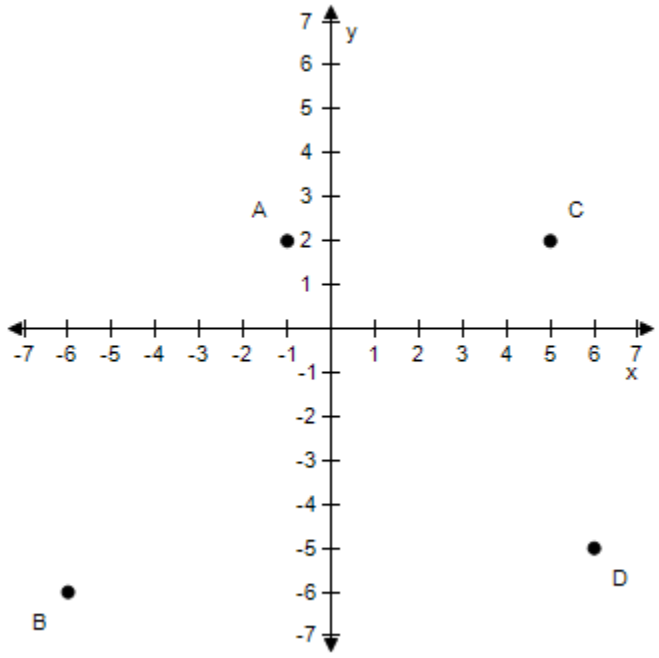
50. The electrical resistance, R, of a wire is directly proportional to its length, l, and inversely proportional to the square of its diameter, d. A wire 150 meters long of diameter 5 millimeters has a resistance of 12 ohms. Find the resistance of a wire made of the same material that has a diameter of 2 millimeters and is 24 meters long.

a. $R = 14.5$ ohms
b. $R = 12$ ohms
c. $R = 15.8$ ohms
d. $R = 15.5$ ohms
e. $R = 0.083$ ohms

ANSWER: b
POINTS: 1
REFERENCES: 3.5.77
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:21 PM
DATE MODIFIED: 10/22/2014 12:18 AM

Section 1.1 - Rectangular Coordinates

1. Approximate the coordinates of the points.

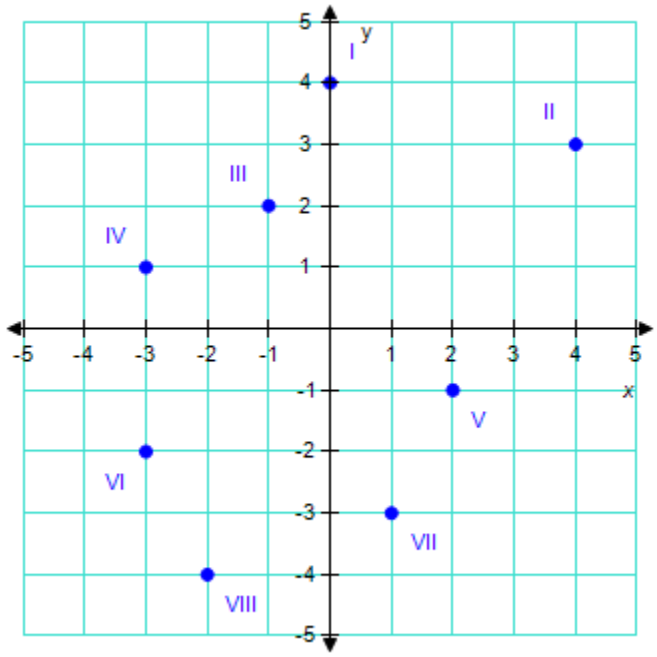


a. A: (4, 2), B: (–6, –6), C: (5, 2), D: (6, –5)
b. A: (1, 2), B: (–6, –6), C: (5, 2), D: (6, –5)
c. A: (2, 2), B: (–6, –6), C: (5, 2), D: (6, –5)
d. A: (3, 2), B: (–6, –6), C: (5, 2), D: (6, –5)
e. A: (–1, 2), B: (–6, –6), C: (5, 2), D: (6, –5)

ANSWER: e
POINTS: 1
REFERENCES: P.6.5
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/15/2014 8:06 AM
DATE MODIFIED: 9/15/2014 8:43 AM

2. Find the coordinates of the point labeled **II**.

Section 1.1 - Rectangular Coordinates

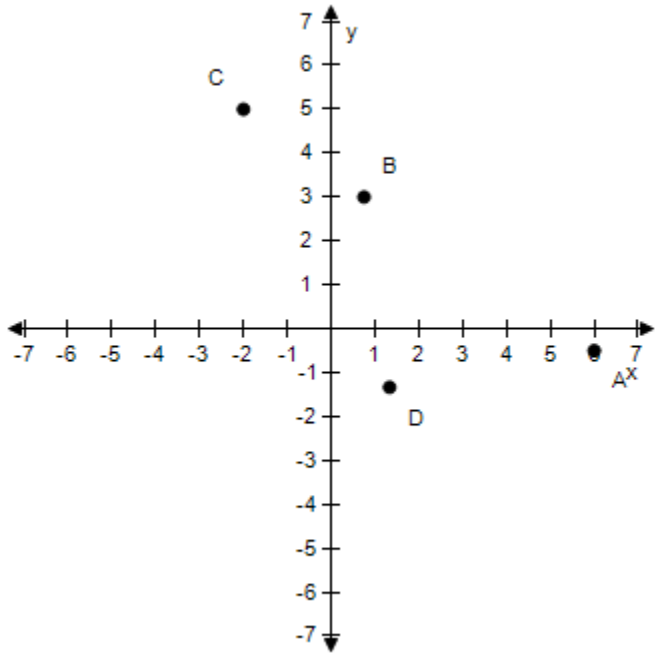


a. (-4, -3)
b. (-4, 3)
c. (3, 4)
d. (4, 3)
e. (-3, -4)

ANSWER: d
POINTS: 1
REFERENCES: P.6.6
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/11/2014 12:57 AM

3. Approximate the coordinates of the points.

Section 1.1 - Rectangular Coordinates



a. $A:\left(6, -\frac{1}{2}\right), B:\left(\frac{3}{4}, 3\right), C:(-2, 5), D:\left(\frac{4}{3}, -\frac{4}{3}\right)$

b. $A:\left(6, -\frac{1}{2}\right), B:\left(\frac{3}{4}, -1\right), C:(-2, 5), D:\left(\frac{4}{3}, -\frac{4}{3}\right)$

c. $A:\left(6, -\frac{1}{2}\right), B:\left(\frac{3}{4}, 0\right), C:(-2, 5), D:\left(\frac{4}{3}, -\frac{4}{3}\right)$

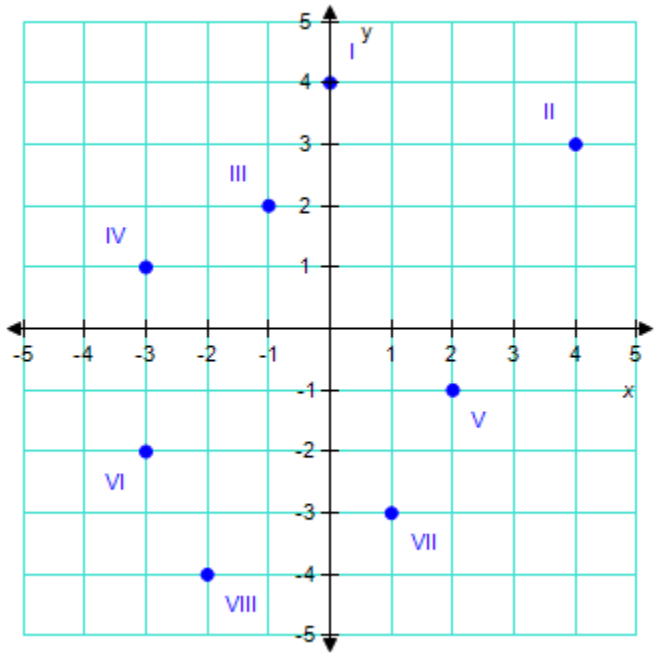
d. $A:\left(6, -\frac{1}{2}\right), B:\left(\frac{3}{4}, 1\right), C:(-2, 5), D:\left(\frac{4}{3}, -\frac{4}{3}\right)$

e. $A:\left(6, -\frac{1}{2}\right), B:\left(\frac{3}{4}, 2\right), C:(-2, 5), D:\left(\frac{4}{3}, -\frac{4}{3}\right)$

ANSWER: a
POINTS: 1
REFERENCES: P.6.6
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/11/2014 1:23 AM

4. Which label corresponds to the coordinates (–3, –5)?

Section 1.1 - Rectangular Coordinates



a. VI
b. VIII
c. V
d. VII
e. none

ANSWER: e
POINTS: 1
REFERENCES: P.6.7
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 10/21/2014 4:56 AM

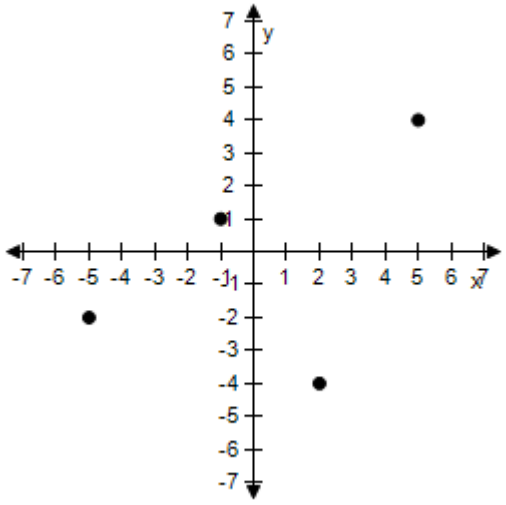
5. Plot the points in the Cartesian plane.

(–4, 1), (–5, –2), (5, 4), (2, –4)

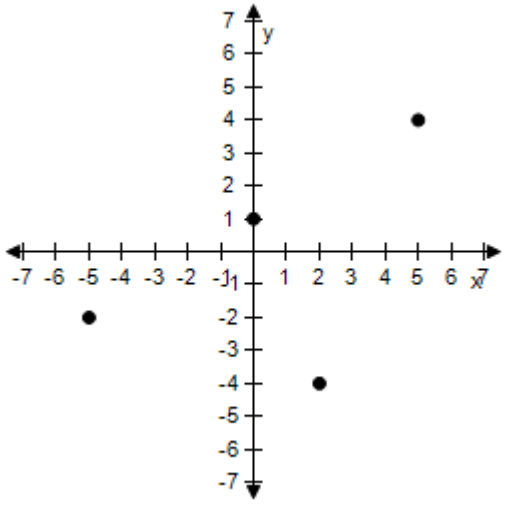
a. b.

Section 1.1 - Rectangular Coordinates

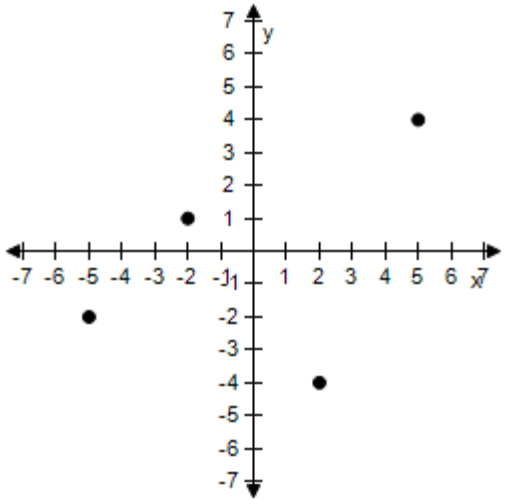
c.

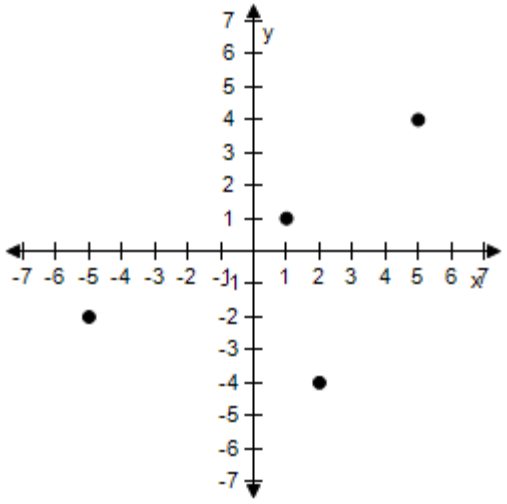


d.

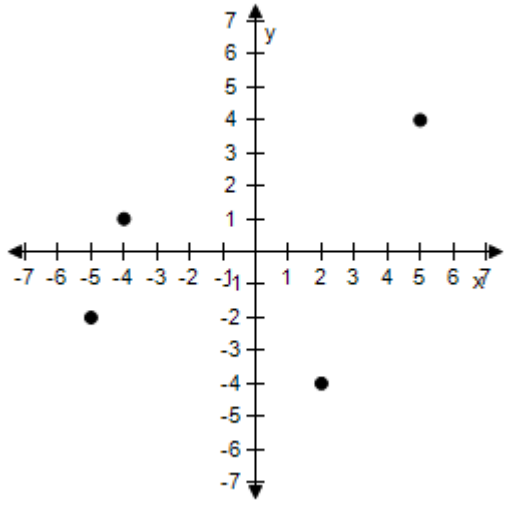


e.





Section 1.1 - Rectangular Coordinates

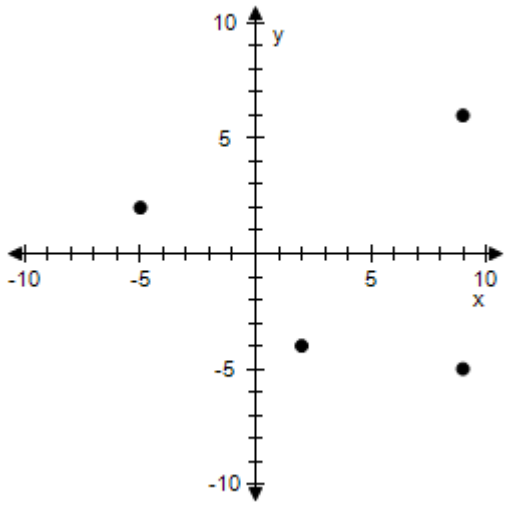


ANSWER: e
POINTS: 1
REFERENCES: P.6.7
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/15/2014 9:08 AM
DATE MODIFIED: 9/15/2014 9:20 AM

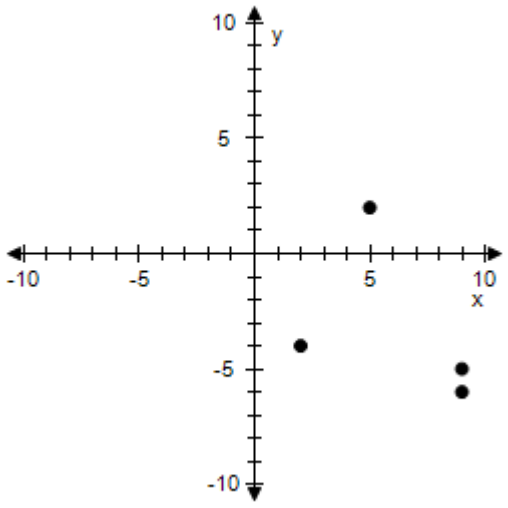
6. Plot the points below whose coordinates are given on a Cartesian coordinate system.

(5, 2), (9, –6), (2, –4), (9, –5)

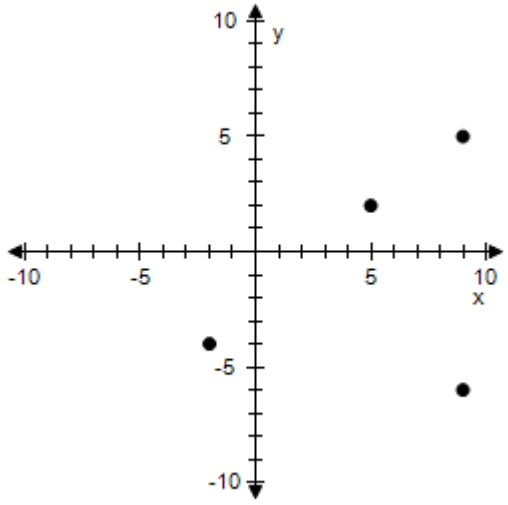
a.



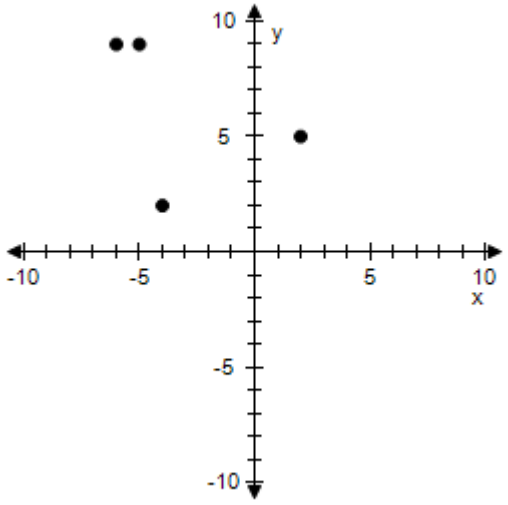
b.



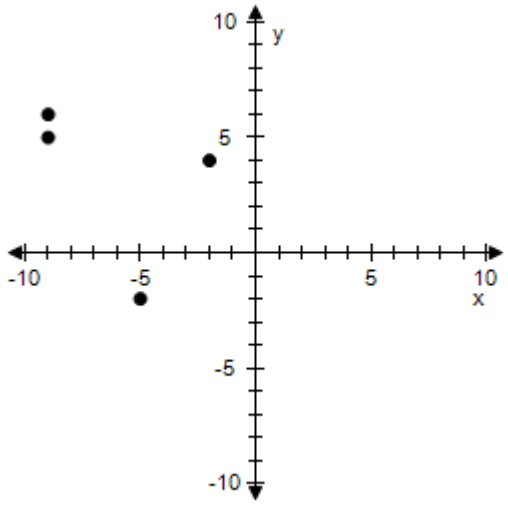
c.



d.



e.



ANSWER: b
POINTS: 1
REFERENCES: P.6.8
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 9/18/2014 9:25 AM

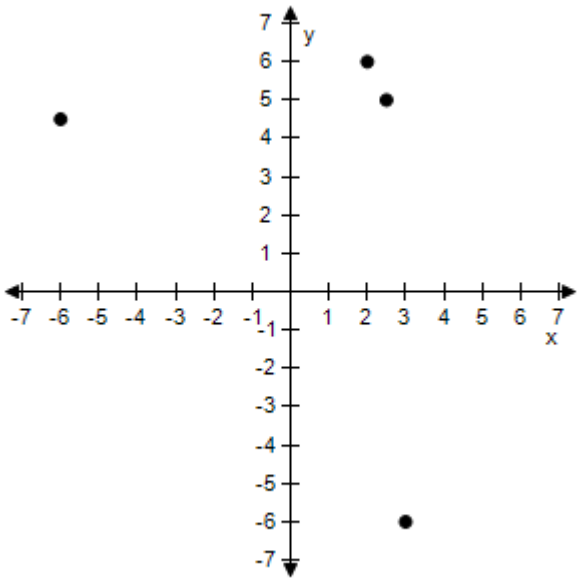
7. Plot the points in the Cartesian plane.

(2, 6), (2.5, 6), (3, –6), (–6, 4.5)

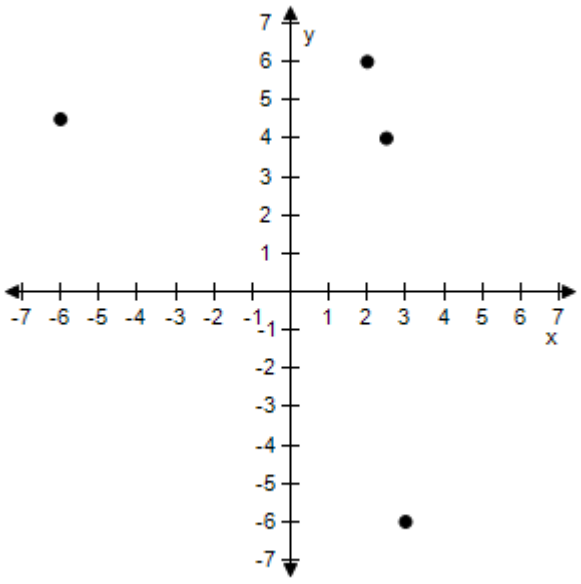
a.

b.

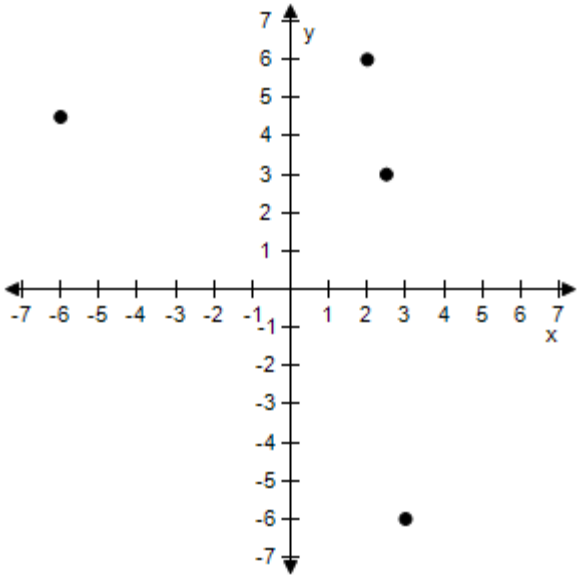
Section 1.1 - Rectangular Coordinates



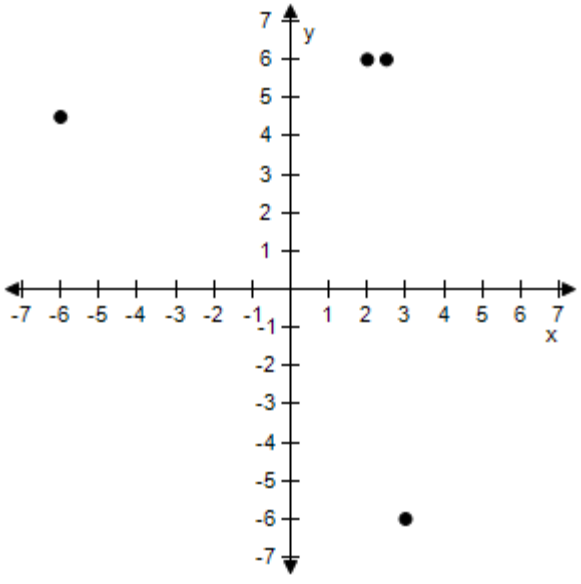
c.



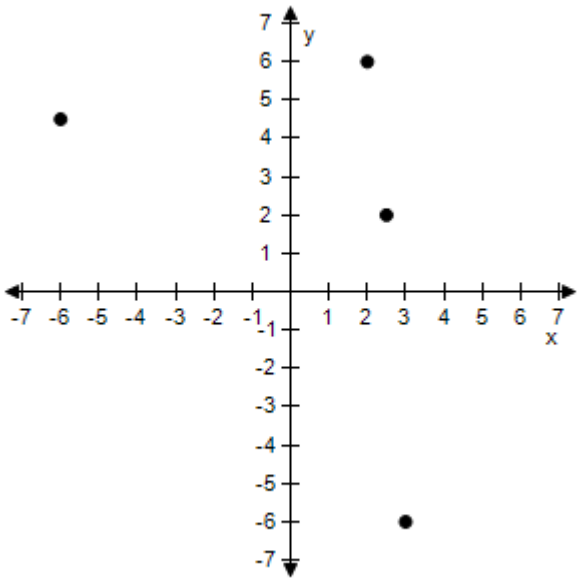
d.



e.



Section 1.1 - Rectangular Coordinates



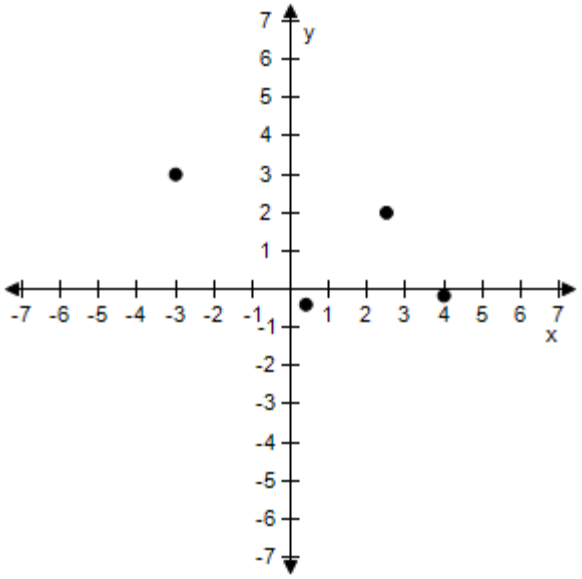
ANSWER: d
POINTS: 1
REFERENCES: P.6.9
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/16/2014 1:25 AM
DATE MODIFIED: 9/16/2014 1:36 AM

8. Plot the points in the Cartesian plane.

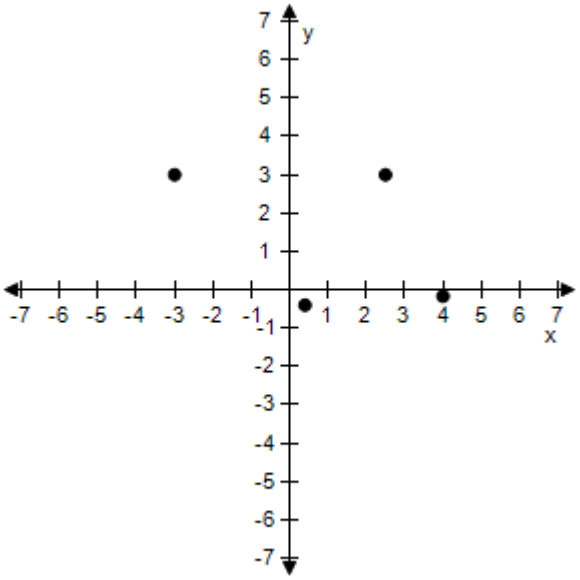
$$\left(4, -\frac{1}{6}\right), \left(\frac{5}{2}, 5\right), (-3, 3), \left(\frac{2}{5}, -\frac{2}{5}\right)$$

Section 1.1 - Rectangular Coordinates

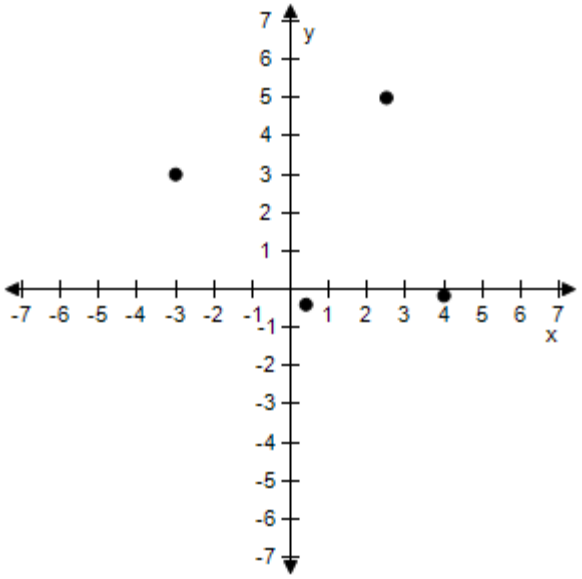
a.



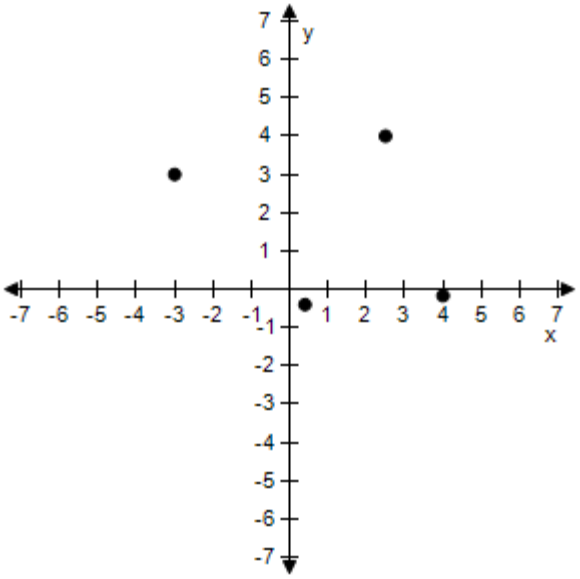
b.



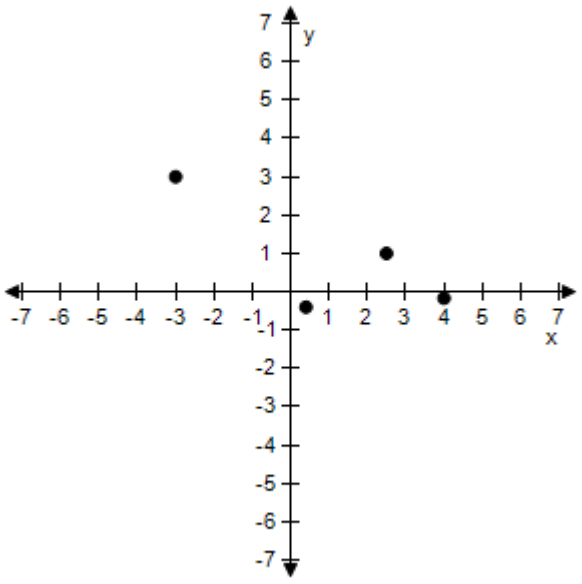
c.



d.



e.



ANSWER: c
POINTS: 1
REFERENCES: P.6.10
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/11/2014 1:22 AM

9. A point is located six units to the left of the *y*-axis and seven units above the *x*-axis. Find the coordinates of the point.

a. (–6, 7)
b. (7, 6)
c. (–6, –7)
d. (6, –7)
e. (6, 7)

ANSWER: a
POINTS: 1
REFERENCES: P.6.11
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/11/2014 1:26 AM

10. Find the coordinates for the point that is four units to the left of the *y*-axis and is six units up from the *x*-axis.

a. (-4, -6)
b. (4, -6)
c. (-4, 6)

d. (6, 6)
e. (4, 6)

ANSWER: c
POINTS: 1
REFERENCES: P.6.12
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/11/2014 1:32 AM

11. A point is located five units below the x-axis and the coordinates of the point are equal. Find the coordinates of the point.

a. (–5, 5)
b. (–5, 0)
c. (5, –5)
d. (–5, –5)
e. (5, 5)

ANSWER: d
POINTS: 1
REFERENCES: P.6.13
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/11/2014 1:34 AM

12. Determine the quadrant(s) in which (x, y) is located so that the condition(s) is (are) satisfied.

$x > 7$ and $y < 0$

a. Quadrant I and IV
b. Quadrant III
c. Quadrant I
d. Quadrant IV
e. Quadrant II

ANSWER: d
POINTS: 1
REFERENCES: P.6.15
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 10/20/2014 8:03 AM

13. Determine the quadrant(s) in which (x, y) is located so that the condition(s) is (are) satisfied.

$x < –8$ and $y < –6$

a. Quadrant I
b. Quadrant I and II
c. Quadrant III
d. Quadrant II
e. Quadrant IV

ANSWER: c
POINTS: 1
REFERENCES: P.6.16
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 10/20/2014 8:05 AM

14. Determine the quadrant(s) in which (x, y) is located so that the condition(s) is (are) satisfied.

$x = -2$ and $y > 0$

a. Quadrant IV
b. Quadrant II or IV
c. Quadrant II
d. Quadrant I
e. Quadrant III

ANSWER: c
POINTS: 1
REFERENCES: P.6.17
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 10/20/2014 8:11 AM

15. Determine the quadrant(s) in which (x, y) is located so that the condition(s) is (are) satisfied.

$x > 3$ and $y = 1$

a. Quadrant III
b. Quadrant I
c. Quadrant III and IV
d. Quadrant II
e. Quadrant IV

ANSWER: b
POINTS: 1
REFERENCES: P.6.18
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True

Section 1.1 - Rectangular Coordinates

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16. Determine the quadrant(s) in which (x, y) is located so that the condition(s) is (are) satisfied.

$y < -6$

a. Quadrant II or IV
b. Quadrant III or IV
c. Quadrant IV
d. Quadrant I
e. Quadrant II

ANSWER: b
POINTS: 1
REFERENCES: P.6.19
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 10/20/2014 8:17 AM

17. Determine the quadrant(s) in which (x, y) is located so that the condition(s) is (are) satisfied.

$x < -9$ and $-y > 6$

a. Quadrant I
b. Quadrant II
c. Quadrant IV
d. Quadrant III
e. Quadrant I or IV

ANSWER: d
POINTS: 1
REFERENCES: P.6.21
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/12/2014 3:20 AM

18. Determine the quadrant(s) in which (x, y) is located so that the conditions(s) is (are) satisfied.

$-x > 6$ and $y < -2$

a. Quadrant III
b. Quadrant I
c. Quadrant II
d. Quadrant I or IV
e. Quadrant IV

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ANSWER: a
POINTS: 1
REFERENCES: P.6.22
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/12/2014 3:22 AM

19. Determine the quadrant(s) in which (x, y) is located so that the condition(s) is (are) satisfied.

$xy < -4$

a. Quadrant II or III
b. Quadrant I or III
c. Quadrant III or IV
d. Quadrant II or IV
e. Quadrant I or IV

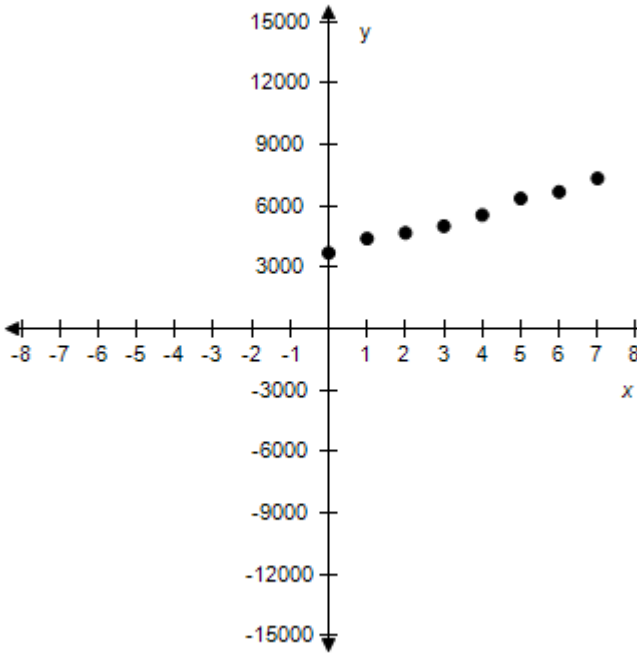
ANSWER: d
POINTS: 1
REFERENCES: P.6.24
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 10/20/2014 8:28 AM

20. Sketch a scatter plot of the data shown in the table.

The table shows the number y of Wal-Mart stores for each year x from 2000 through 2007.

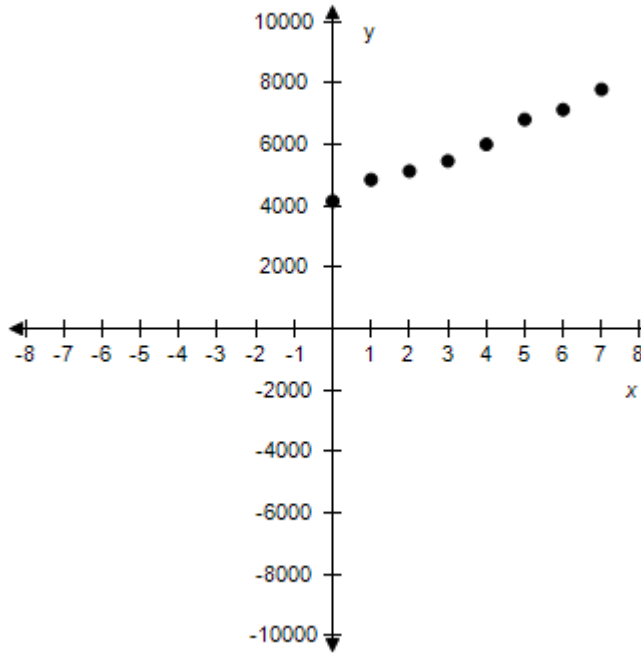
Year, x	Number of stores, y
2000	3700
2001	4400
2002	4680
2003	5010
2004	5550
2005	6360
2006	6680
2007	7340

a. b.



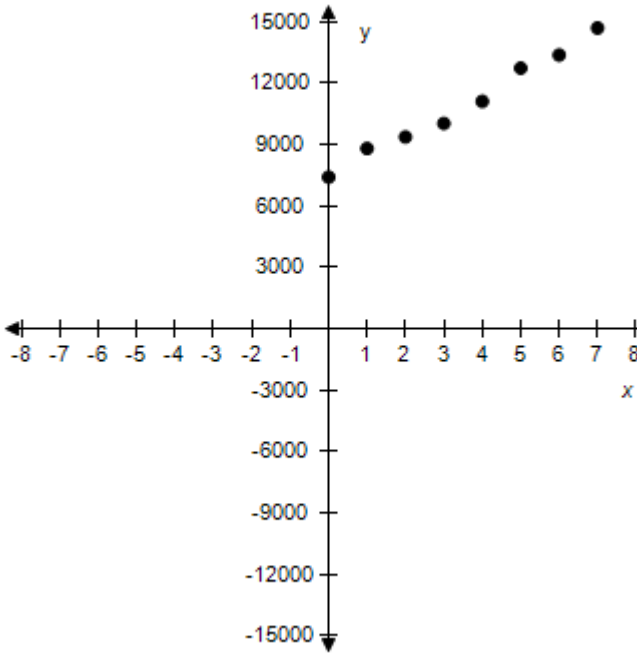
x: Year (0 ↔ 2000)
y: Number of stores

c.



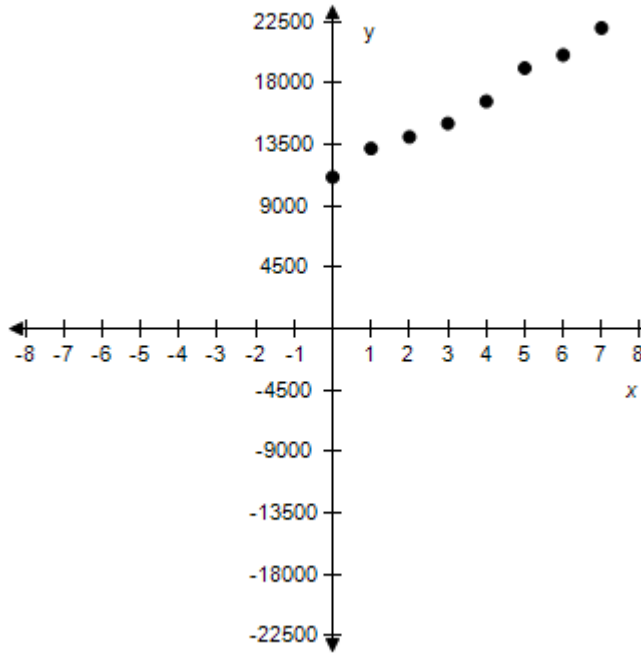
x: Year (0 ↔ 2000)
y: Number of stores

d.



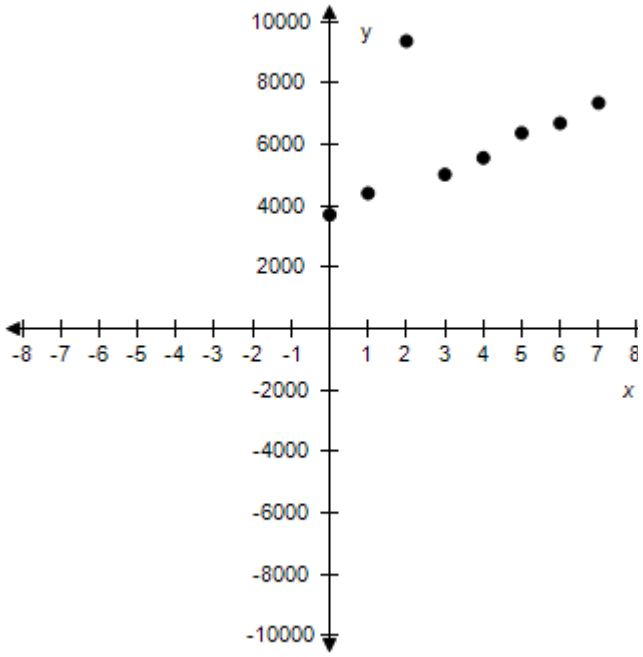
x: Year (0 ↔ 2000)
y: Number of stores

e.



x: Year (0 ↔ 2000)
y: Number of stores

Section 1.1 - Rectangular Coordinates



x: Year (0 ↔ 2000)
y: Number of stores

ANSWER: a
POINTS: 1
REFERENCES: P.6.25
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
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21. Sketch a scatter plot of the data shown in the table.

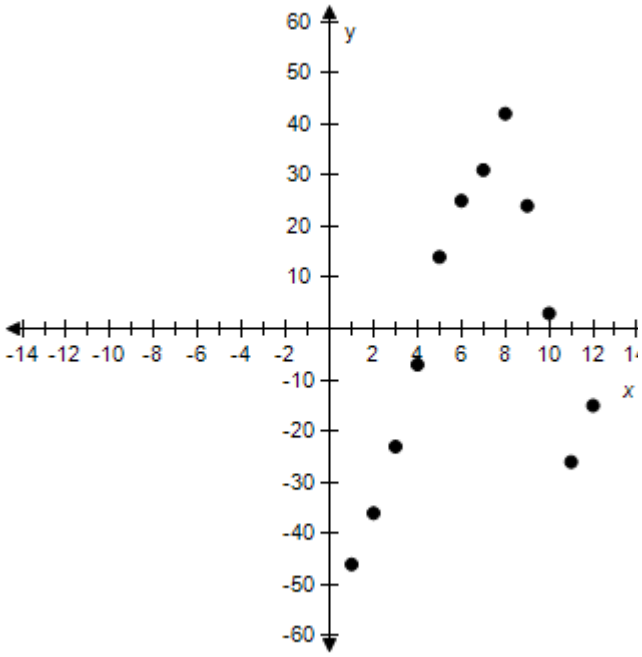
The table shows the lowest temperature on record *y* (in degrees Fahrenheit) in Duluth, Minnesota for each month *x* where $x = 1$ represents from January.

Months, *x*	Temperature, *y*
1	–46
2	–36
3	–23
4	–7
5	14
6	25
7	31
8	42
9	24
10	3

Section 1.1 - Rectangular Coordinates

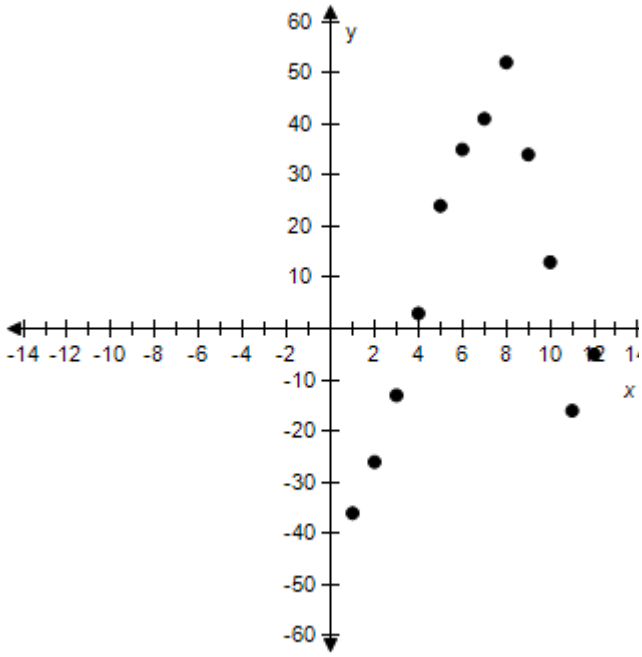
11	–26
12	–15

a.



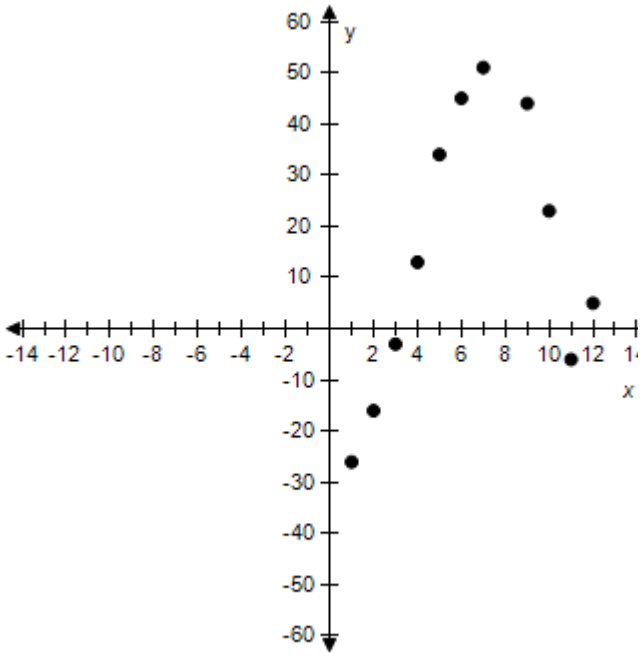
x: Months (1 ↔ January)
y: Temperature (in F°)

b.

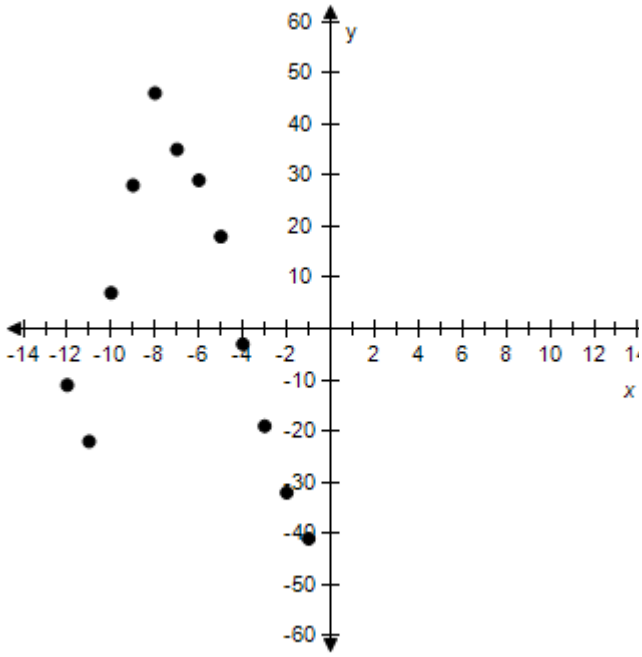


x: Months (1 ↔ January)
y: Temperature (in F°)

c.



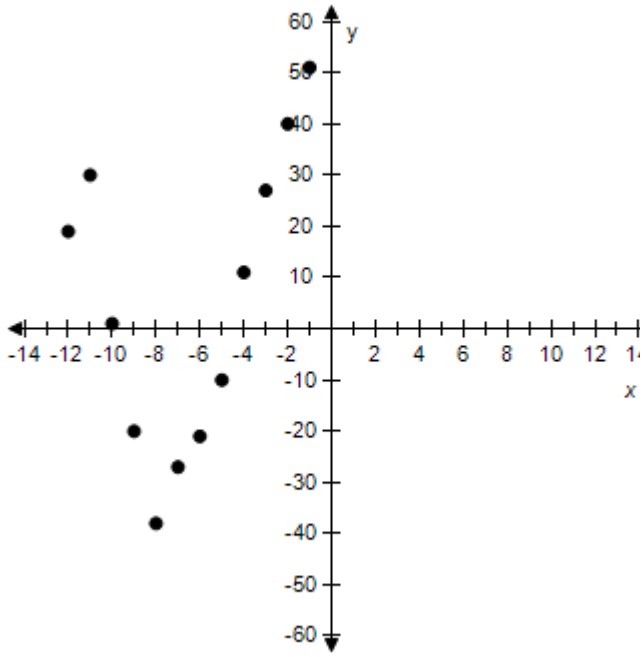
d.



x: Months (1 ↔ January)
y: Temperature (in F°)

x: Months (1 ↔ January)
y: Temperature (in F°)

e.



x: Months (1 ↔ January)
y: Temperature (in F°)

ANSWER: a
POINTS: 1
REFERENCES: P.6.26
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/13/2015 6:53 AM

22. Find the distance between the two points (6, 1) and (6, 7).

a. 1
b. 13
c. 12
d. 11
e. 6

ANSWER: e
POINTS: 1
REFERENCES: P.6.27
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True

Section 1.1 - Rectangular Coordinates

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23. Find the distance between the two points (–3, –1) and (13, 29).

a. 65
b. 68
c. 102
d. 31
e. 34

ANSWER: e
POINTS: 1
REFERENCES: P.6.28
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 10/21/2014 1:51 AM

24. Find the distance between the two points (10, 7) and (–5, 7).

a. 30
b. 20
c. 12
d. 40
e. 15

ANSWER: e
POINTS: 1
REFERENCES: P.6.29
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 10/21/2014 1:55 AM

25. Find the distance between the points.

(–8, –5), (–2, 3)

a. 10
b. 100
c. 2
d. 5
e. 8

ANSWER: a
POINTS: 1
REFERENCES: P.6.30
QUESTION TYPE: Multi-Mode (Multiple choice)

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HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
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26. Find the distance between the points.

(–9, 4), (3, –5)

a. 4
b. 15
c. 9
d. 3
e. 225

ANSWER: b
POINTS: 1
REFERENCES: P.6.31
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/12/2014 4:40 AM

27. Find the distance between the points. (Round the answer to two decimal places)

(–6.5, 4.9), (–9.5, 7.5)

a. 15.76
b. 9.5
c. 7.5
d. 3.97
e. 6.5

ANSWER: d
POINTS: 1
REFERENCES: P.6.37
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
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28. Find the distance between the points. (Round the answer to two decimal places)

(9.5, –4.1), (–3.3, 8.7)

a. 8.7
b. 9.5
c. 327.68
d. 3.3
e. 18.10

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ANSWER: e
POINTS: 1
REFERENCES: P.6.38
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 10/21/2014 2:22 AM

29. Show that the points form the vertices of the indicated polygon.

Right triangle: (6, 2), (3, 4), (–3, –5)

a. $\left(\sqrt{25}\right)^2+\left(\sqrt{117}\right)^2=\left(\sqrt{130}\right)^2$

b. $\left(\sqrt{7}\right)^2+\left(\sqrt{117}\right)^2=\left(\sqrt{130}\right)^2$

c. $\left(\sqrt{11}\right)^2+\left(\sqrt{117}\right)^2=\left(\sqrt{130}\right)^2$

d. $\left(\sqrt{13}\right)^2+\left(\sqrt{117}\right)^2=\left(\sqrt{130}\right)^2$

e. $\left(\sqrt{40}\right)^2+\left(\sqrt{117}\right)^2=\left(\sqrt{130}\right)^2$

ANSWER: d
POINTS: 1
REFERENCES: P.6.43
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 10/21/2014 2:38 AM

30. Given the points (–6, –8) and (4, –6). Find a third point so that the three points form the vertices of a right triangle.

a. (-16, 4)
b. (-11, 17)
c. (-6, -9)
d. (5, -6)
e. (4, 6)

ANSWER: b
POINTS: 1
REFERENCES: P.6.43
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/12/2014 5:48 AM

31. Show that the points form the vertices of the indicated polygon.

Section 1.1 - Rectangular Coordinates

Right triangle: (3, 5), (5, 6), (6, 4)

a. $\left(\sqrt{5}\right)^2+\left(\sqrt{5}\right)^2=\left(\sqrt{10}\right)^2$

b. $\left(\sqrt{31}\right)^2+\left(\sqrt{5}\right)^2=\left(\sqrt{10}\right)^2$

c. $\left(\sqrt{7}\right)^2+\left(\sqrt{5}\right)^2=\left(\sqrt{10}\right)^2$

d. $\left(\sqrt{11}\right)^2+\left(\sqrt{5}\right)^2=\left(\sqrt{10}\right)^2$

e. $\left(\sqrt{34}\right)^2+\left(\sqrt{5}\right)^2=\left(\sqrt{10}\right)^2$

ANSWER: a
POINTS: 1
REFERENCES: P.6.44
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 10/21/2014 2:50 AM

32. Given points(–1,1), and (–11,–9) form the vertices of the base of a triangle, find a third point so that the three points form the vertices of an isosceles triangle.

a. (3, 1)
b. (4, -15)
c. (-15, -13)
d. (3, 5)
e. (-6, -4)

ANSWER: e
POINTS: 1
REFERENCES: P.6.45
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/14/2015 4:01 AM

33. Show that the points form the vertices of the indicated polygon.

Isosceles triangle: (7, –6), (9, 8), (–5, 6)

a. Distances between the points: $\sqrt{37}, \sqrt{200}, \sqrt{288}$

b. Distances between the points: $\sqrt{200}, \sqrt{200}, \sqrt{288}$

c. Distances between the points: $\sqrt{26}, \sqrt{200}, \sqrt{288}$

d. Distances between the points: $\sqrt{43}, \sqrt{200}, \sqrt{288}$

e. Distances between the points: $\sqrt{19}, \sqrt{200}, \sqrt{288}$

ANSWER: b
POINTS: 1
REFERENCES: P.6.45
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 10/21/2014 4:14 AM

34. Show that the points form the vertices of the indicated polygon.

Isosceles triangle: (7, 1), (5, 4), (2, 6)

a. Distances between the points: $\sqrt{19}, \sqrt{13}, \sqrt{50}$
b. Distances between the points: $\sqrt{13}, \sqrt{13}, \sqrt{50}$
c. Distances between the points: $\sqrt{43}, \sqrt{13}, \sqrt{50}$
d. Distances between the points: $\sqrt{26}, \sqrt{13}, \sqrt{50}$
e. Distances between the points: $\sqrt{37}, \sqrt{13}, \sqrt{50}$

ANSWER: b
POINTS: 1
REFERENCES: P.6.46
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/12/2014 7:00 AM

35. Plot the following points and find the distance between the points.

(11, 3), (5, 3)

a. b.

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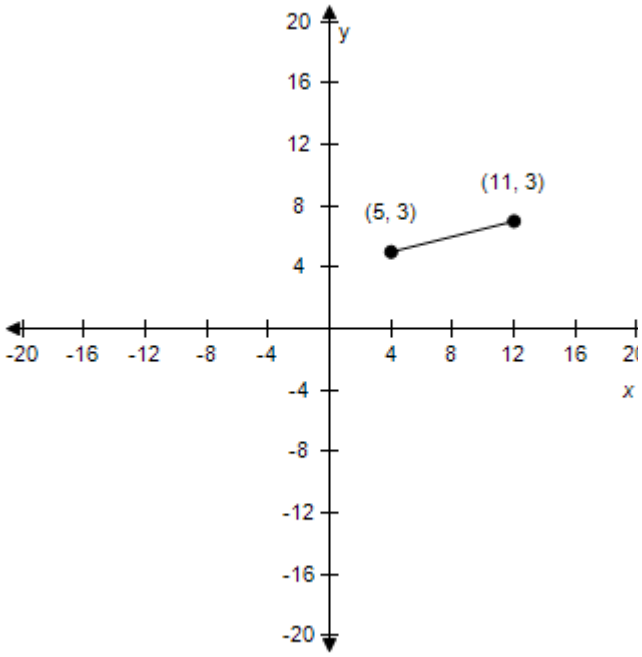
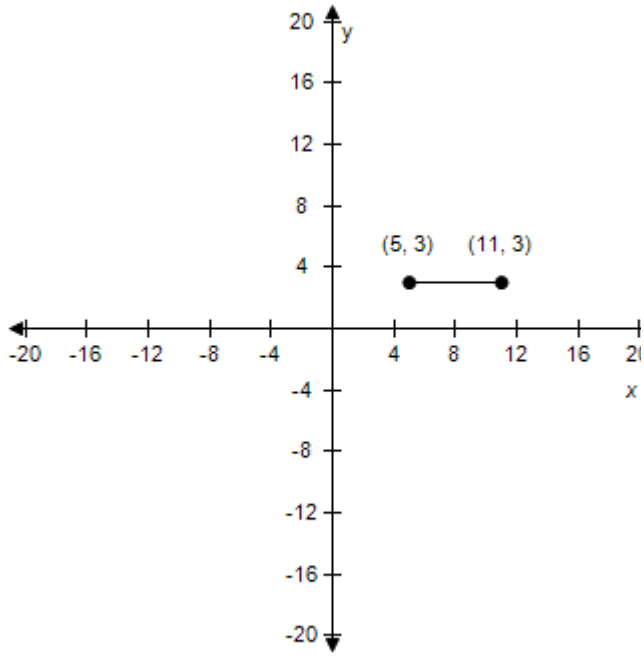


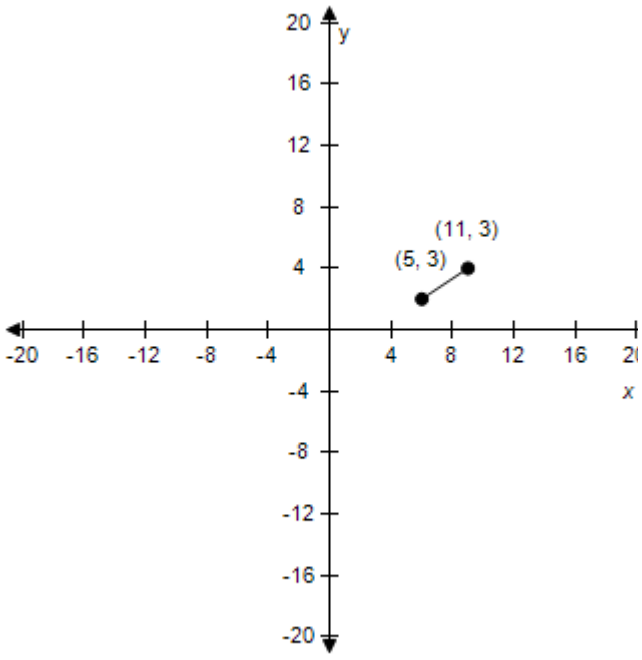
Distance: 8

c.



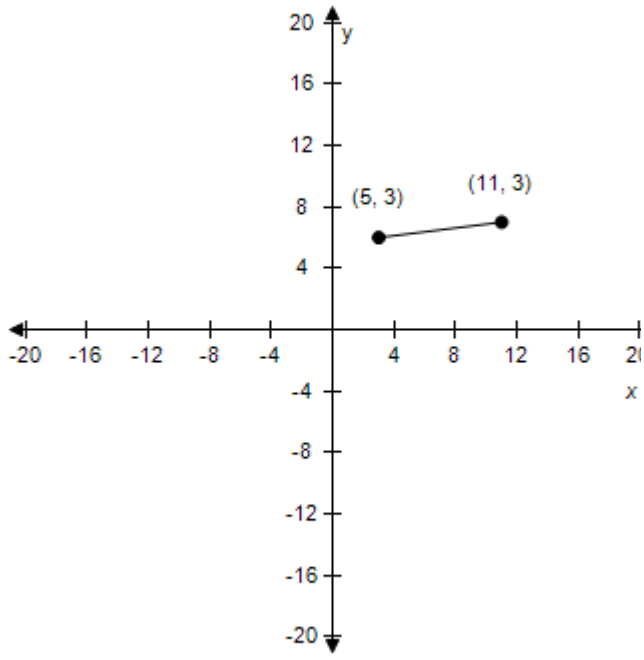
Distance: 6

d.

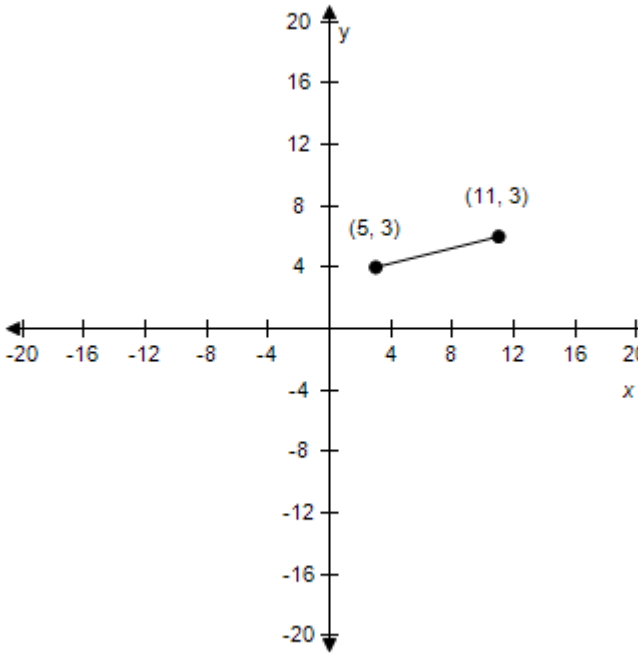


Distance: 9

e.



Distance: 10



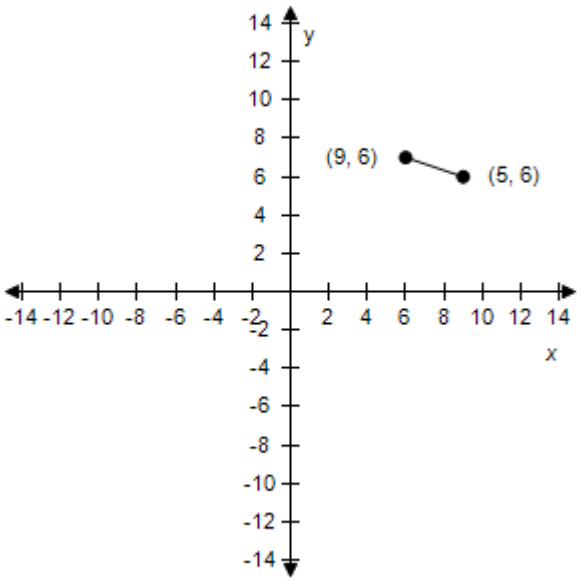
Distance: 7

ANSWER: b
POINTS: 1
REFERENCES: P.6.47
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/13/2014 8:59 AM

36. Plot the following points and find the midpoint of the line segment joining the points.

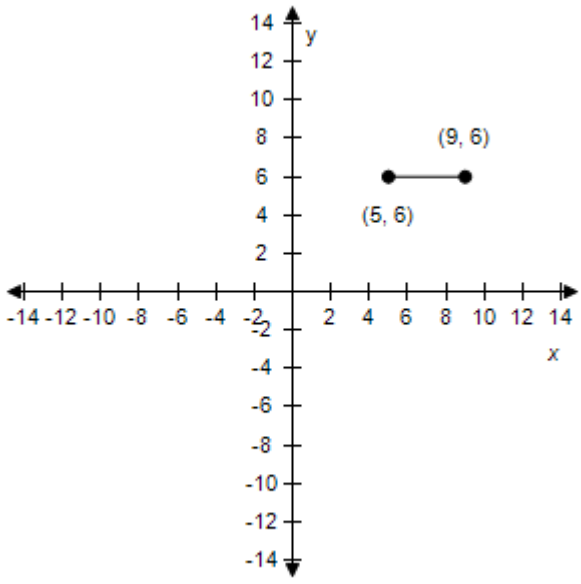
(9, 6), (5, 6)

a. b.



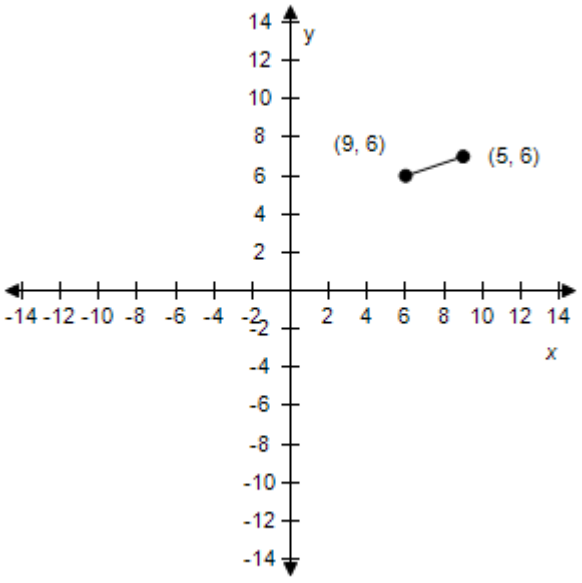
Midpoint: (7, 6)

c.



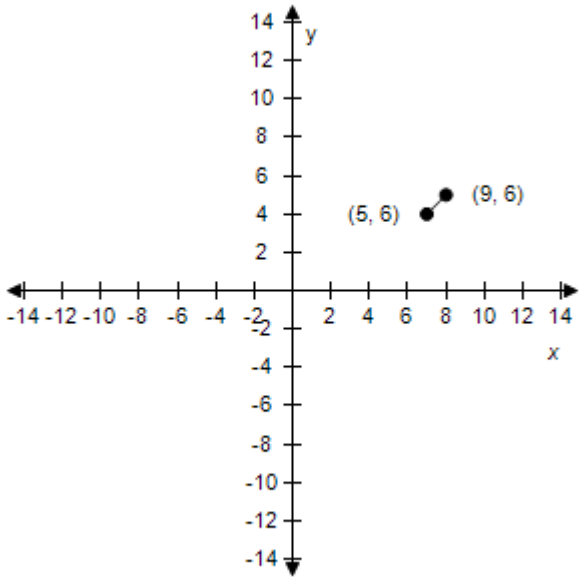
Midpoint: (7, 6)

d.

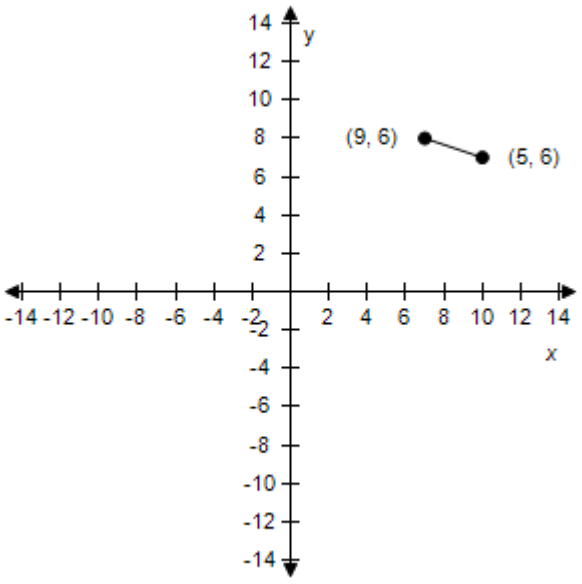


Midpoint: (7, 6)

e.



Midpoint: (7, 6)



Midpoint: (7, 6)

ANSWER: b
POINTS: 1
REFERENCES: P.6.48
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/14/2014 12:24 AM

37. Find the midpoint between the two points (–19, 9) and (11, 13).

a. (-15, 2)
b. (-15, 11)
c. (-8, 11)
d. (-4, 2)
e. (-4, 11)

ANSWER: e
POINTS: 1
REFERENCES: P.6.49c
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/13/2014 6:54 AM

38. Plot the following points and find the distance between the points.

(–5, 8), (7, 2)

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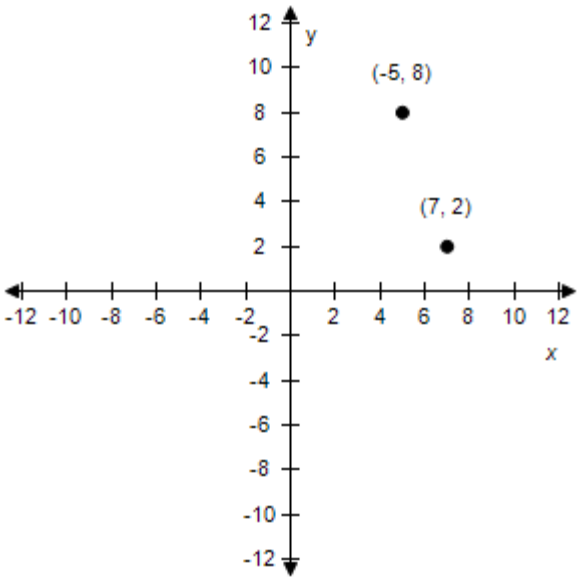
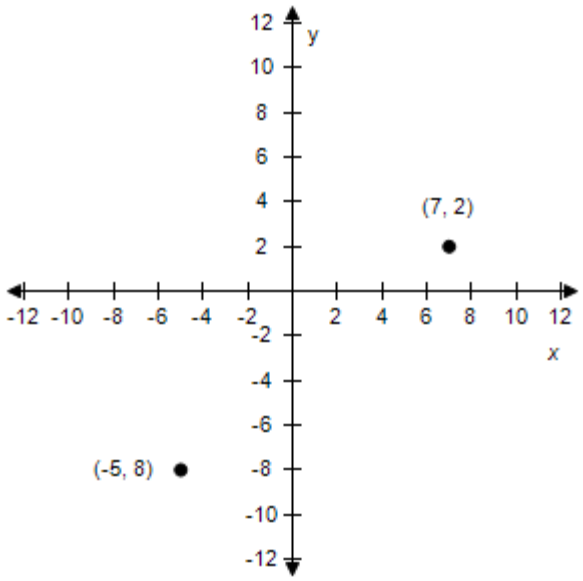
a.



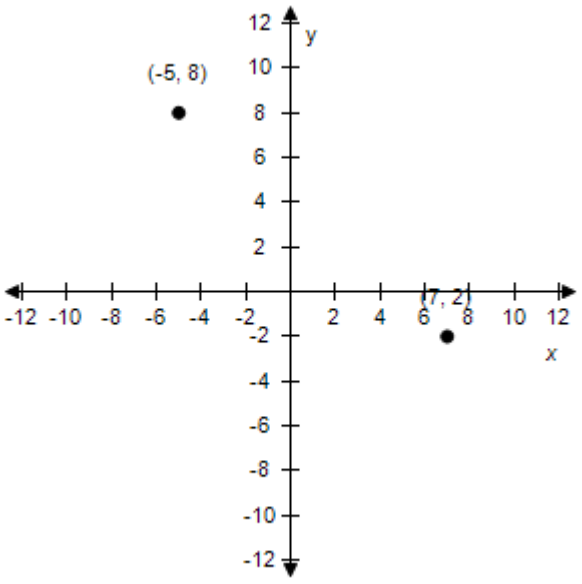
Distance: $6\sqrt{5}$

b.



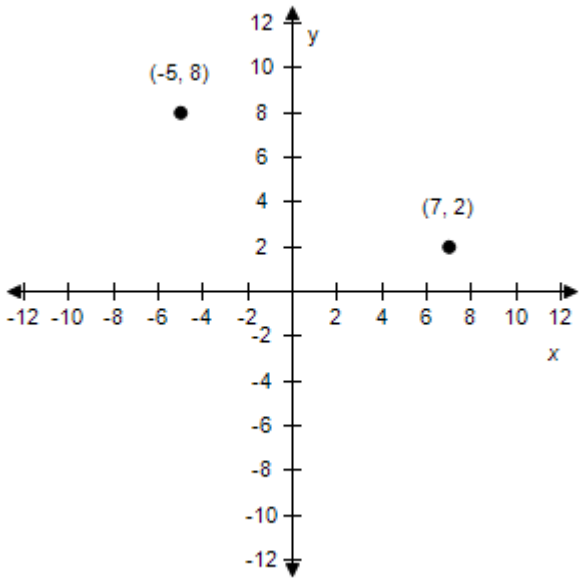
Distance: $6\sqrt{5}$

c.



Distance: $6\sqrt{5}$

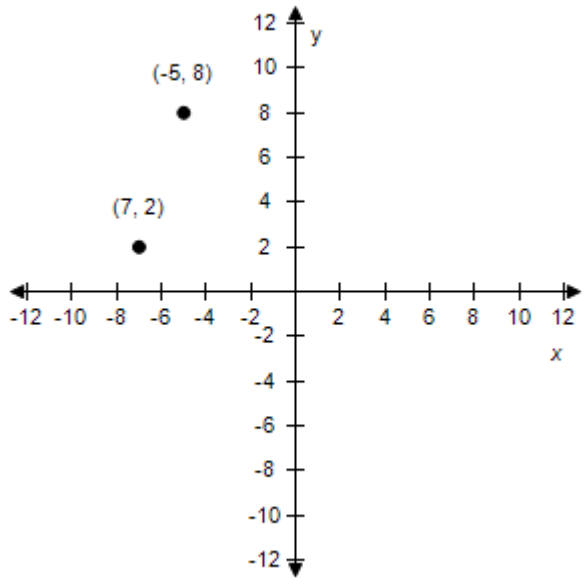
d.



Distance: $6\sqrt{5}$

e.

Section 1.1 - Rectangular Coordinates



Distance: $6\sqrt{5}$

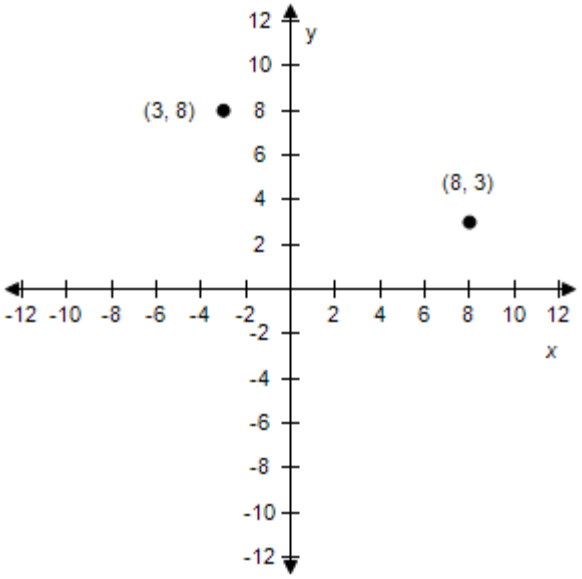
ANSWER: d
POINTS: 1
REFERENCES: P.6.51
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/13/2014 8:34 AM

39. Plot the following points and find the distance between the points.

(3, 8), (8, 3)

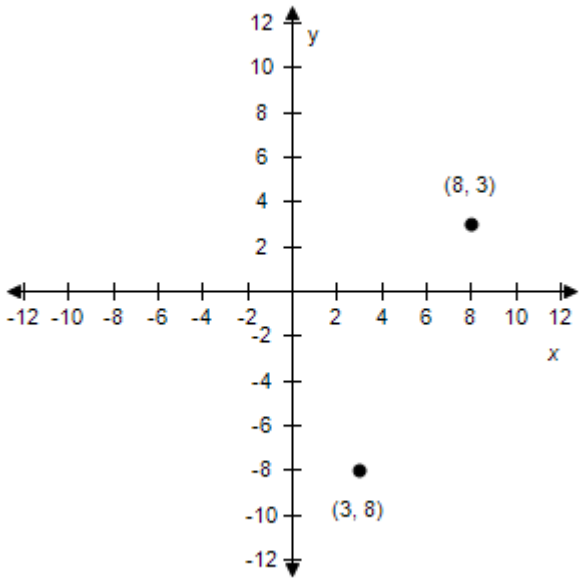
Section 1.1 - Rectangular Coordinates

a.



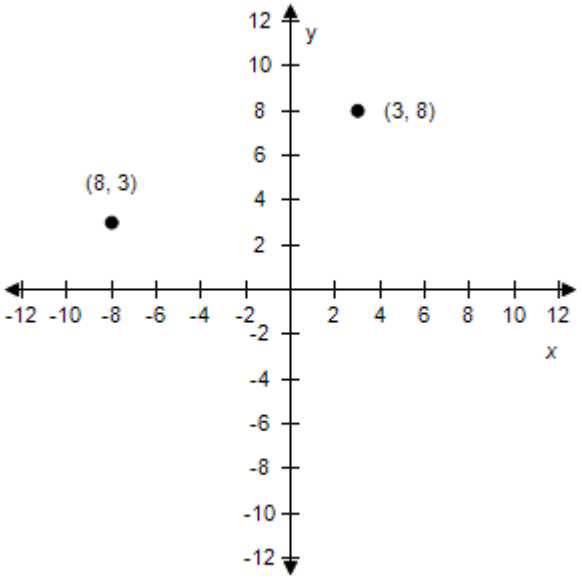
Distance: $5\sqrt{2}$

b.



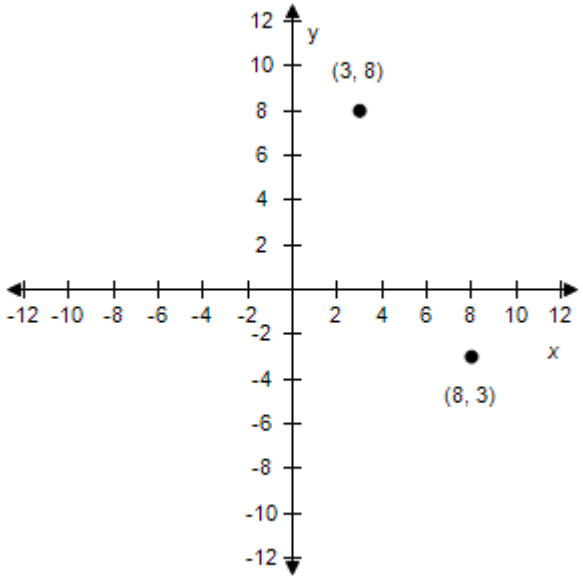
Distance: $5\sqrt{2}$

c.



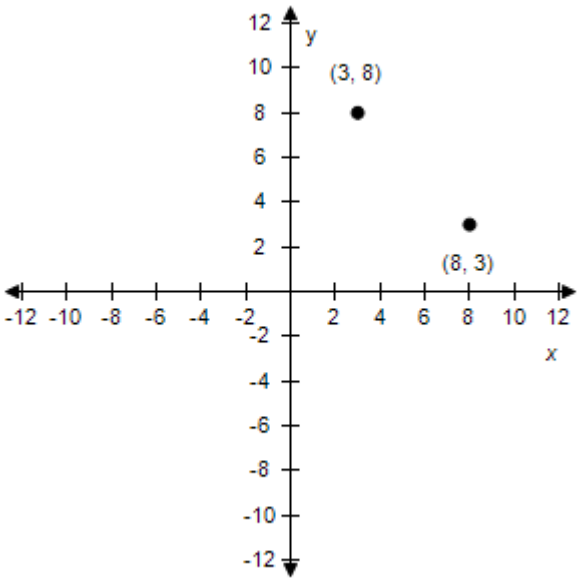
Distance: $5\sqrt{2}$

d.



Distance: $5\sqrt{2}$

e.



Distance: $5\sqrt{2}$

ANSWER: e
POINTS: 1
REFERENCES: P.6.52
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/14/2014 12:32 AM

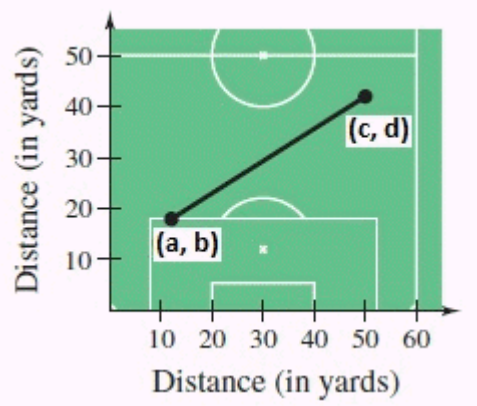
40. An airplane flies from one city in a straight line to another city, which is 360 kilometers north and 150 kilometers west of first city. How far does the plane fly?

a. 150 km
b. 390 km
c. 255 km
d. 360 km
e. 350 km

ANSWER: b
POINTS: 1
REFERENCES: P.6.57
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/14/2014 1:47 AM

41. A soccer player passes the ball from a point that is 13 yards from the end line and 16 yards from the sideline. The pass is received by a teammate who is 48 yards from the same end line and 39 yards from the same sideline, as shown in the figure. How long is the pass?

Section 1.1 - Rectangular Coordinates



(a, b): (13, 16)
(c, d): (48, 39)

a. $\sqrt{1754} \approx 44$ yd
b. $\sqrt{757} \approx 43$ yd
c. $\sqrt{1754} \approx 45$ yd
d. $\sqrt{1754} \approx 42$ yd
e. $\sqrt{1754} \approx 46$ yd

ANSWER: d
POINTS: 1
REFERENCES: P.6.58
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/14/2014 1:04 AM

42. A quarterback is standing in the middle of the field 41 yards from his goal line. He passes the ball to a player 8 yards to his left on the 26 yard line. How long was the pass?

a. 42 yards
b. 15 yards
c. 27 yards
d. 17 yards
e. 67 yards

ANSWER: d
POINTS: 1
REFERENCES: P.6.58
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/14/2014 1:21 AM

43. Use the Midpoint Formula to estimate the sales of Big Lots, Inc. in 2005, given the sales in 2003 and 2007.

Assume that the sales followed a linear pattern.

Big Lots

Year	Sales (in millions)
2003	4174
2007	4700

a. $4700 million
b. $4457 million
c. $4174 million
d. $4437 million
e. $4447 million

ANSWER: d
POINTS: 1
REFERENCES: P.6.59
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/14/2014 1:24 AM

44. Use the Midpoint Formula to estimate the sales of Dollar Tree Stores, Inc. in 2005, given the sales in 2003 and 2007. Assume that the sales followed a linear pattern.

Dollar tree

Year	Sales (in millions)
2003	2200
2007	4283

a. $3241.5 million
b. $3251.5 million
c. $3246.5 million
d. $3256.5 million
e. $3261.5 million

ANSWER: a
POINTS: 1
REFERENCES: P.6.60
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/14/2014 1:31 AM

45. Find the coordinates of the vertices of the polygon in its new position.

Original coordinates of vertices: (–5, –3), (–3, 6), (–5, –4), (–4, –7)
Shift: three units to the right, four units upward

a. (–2, 1), (0, 10), (–2, 0), (–1, –3)
b. (1, 1), (0, 10), (–2, 0), (–1, –3)
c. (2, 1), (0, 10), (–2, 0), (–1, –3)
d. (3, 1), (0, 10), (–2, 0), (–1, –3)
e. (4, 1), (0, 10), (–2, 0), (–1, –3)

ANSWER: a
POINTS: 1
REFERENCES: P.6.63
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/14/2014 2:36 AM

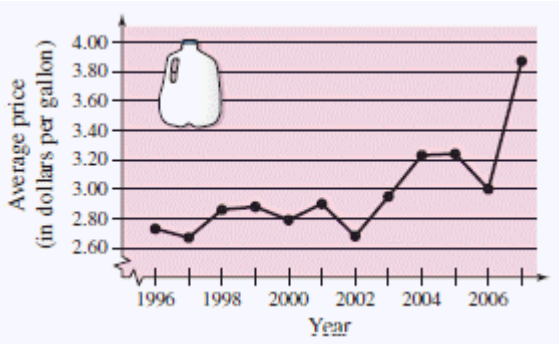
46. Find the coordinates of the vertices of the polygon in its new position.

Original coordinates of vertices: (6, 5), (3, 2), (4, 2), (5, 2)
Shift: six units downward, two units to the left

a. (13, –1), (1, –4), (2, –4), (3, –4)
b. (10, –1), (1, –4), (2, –4), (3, –4)
c. (12, –1), (1, –4), (2, –4), (3, –4)
d. (4, –1), (1, –4), (2, –4), (3, –4)
e. (11, –1), (1, –4), (2, –4), (3, –4)

ANSWER: d
POINTS: 1
REFERENCES: P.6.64
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/14/2014 2:48 AM

47. Use the graph, which shows the average retail prices of 1 gallon of whole milk from 1996 through 2007.



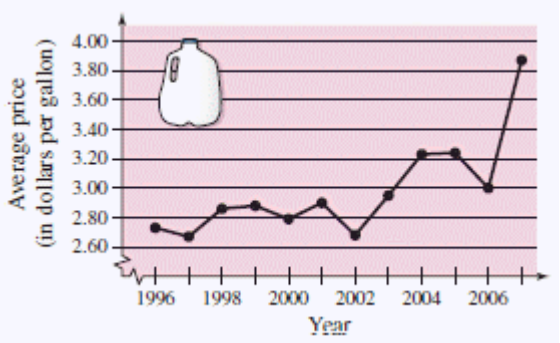
Approximate the lowest price of a gallon of whole milk shown in the graph. When did this occur?

a. $2.97 / gal; 2001
b. $3.17 / gal; 2002

c. $3.07 / gal; 2003
d. $2.67 / gal; 1997
e. $3.87 / gal; 2004

ANSWER: d
POINTS: 1
REFERENCES: P.6.65
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/14/2014 2:55 AM

48. Use the graph, which shows the average retail prices of 1 gallon of whole milk from 1996 through 2007.

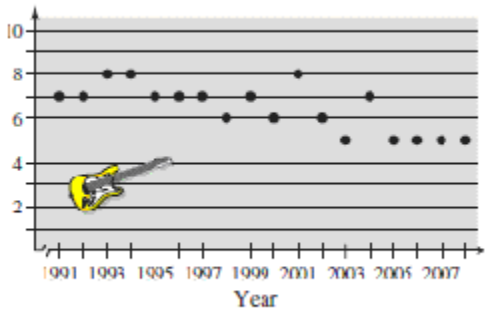


Approximate the percent change in the price of milk from the price in 2000 to the highest price shown in the graph.

a. About 48%
b. About 58%
c. About 43%
d. About 53%
e. About 38%

ANSWER: e
POINTS: 1
REFERENCES: P.6.66
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/13/2015 9:12 AM

49. The graph shows the numbers of performers who were elected to the Rock and Roll Hall of Fame from 1991 through 2008. Describe any trends in the data. From these trends, predict the number of performers elected in 2009.



a. The number of performers elected in last four years in the graph seems to be nearly steady except for the first few years therefore five performers will be elected in 2009.
b. The number of performers elected in last four years in the graph seems to be nearly steady except for the first few years therefore seven performers will be elected in 2009.
c. The number of performers elected in last four years in the graph seems to be nearly steady except for the first few years therefore eight performers will be elected in 2009.
d. The number of performers elected in last four years in the graph seems to be nearly steady except for the first few years therefore six performers will be elected in 2009.
e. The number of performers elected in last four years in the graph seems to be nearly steady except for the first few years therefore nine performers will be elected in 2009.

ANSWER: a
POINTS: 1
REFERENCES: P.6.69
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/14/2014 3:22 AM

50. The Coca-Cola Company had sales of $19,999 million in 1999 and $29,511 million in 2007. Use the Midpoint Formula to estimate the sales in 2003. Assume that the sales followed a linear pattern.

a. $24,905 million
b. $24,855 million
c. $24,755 million
d. $24,955 million
e. $24,805 million

ANSWER: c
POINTS: 1
REFERENCES: P.6.71
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/13/2015 9:11 AM

Section 1.1 - Rectangular Coordinates

51. Determine the quadrant(s) in which (x, y) is located so that the condition is satisfied.
$x = 2$ and $y < -8$

a. quadrant II
b. quadrant IV
c. quadrants I and IV
d. quadrants II and IV
e. quadrants III and IV

ANSWER: b
POINTS: 1
REFERENCES: 11-20
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 6/10/2014 4:15 PM

52. Find the distance between the points. Round to the nearest hundredth, if necessary.

(–8, –8), (–1, 9)

a. 19.24
b. 7.07
c. 18.38
d. 10
e. 9.06

ANSWER: c
POINTS: 1
REFERENCES: 23-32
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 11/14/2014 3:39 AM
DATE MODIFIED: 11/14/2014 3:49 AM

53.)Given points(5,–11), and (11,–5) form the vertices of the base of a triangle, find a third point so that the three points form the vertices of an isosceles triangle.

a. (8, -8)
b. (11, -12)
c. (6, -10)
d. (10, -6)
e. (10, -11)

ANSWER: a
POINTS: 1
REFERENCES: 37-44
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True

Section 1.1 - Rectangular Coordinates

DATE CREATED: 6/10/2014 4:15 PM
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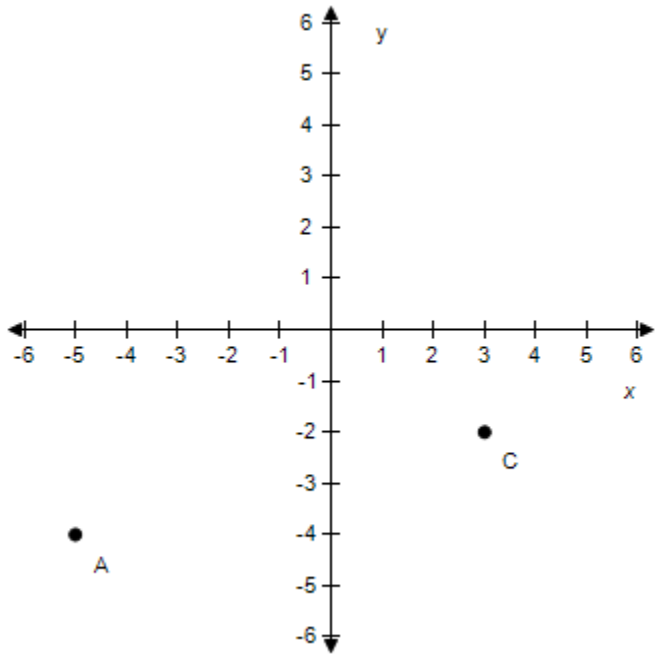
54. Find the coordinates of the point C shown below.



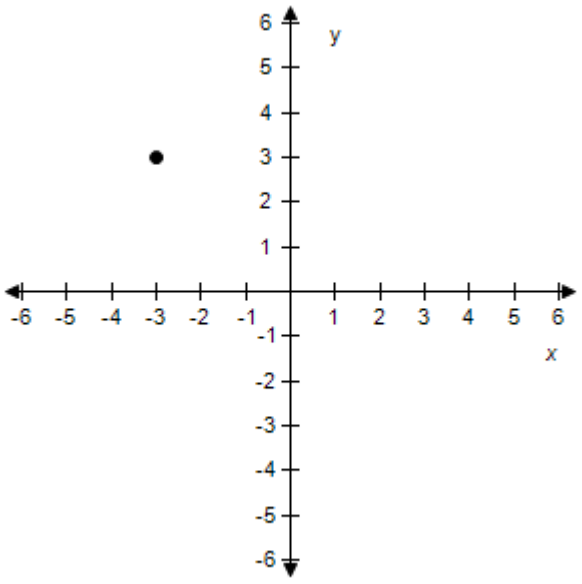
a. (–2, 3) b. (3, -2)
c. (–4, –5) d. (-5, -4)
e. (–5, –2)

ANSWER: b
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/14/2014 4:18 AM

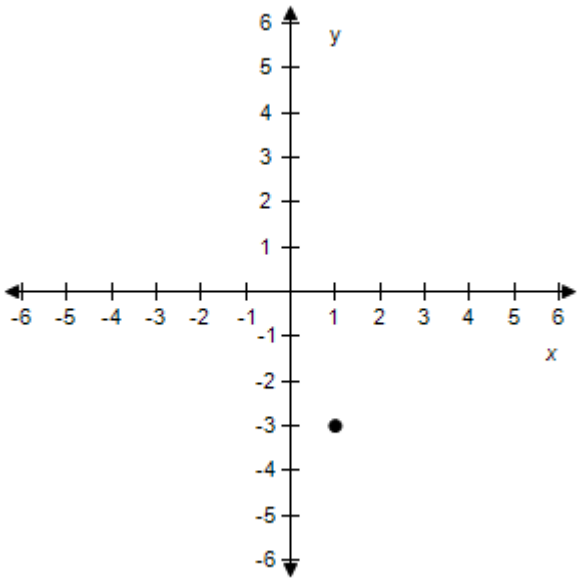
55. Plot the point (–3, 1) on the Cartesian plane.

Section 1.1 - Rectangular Coordinates

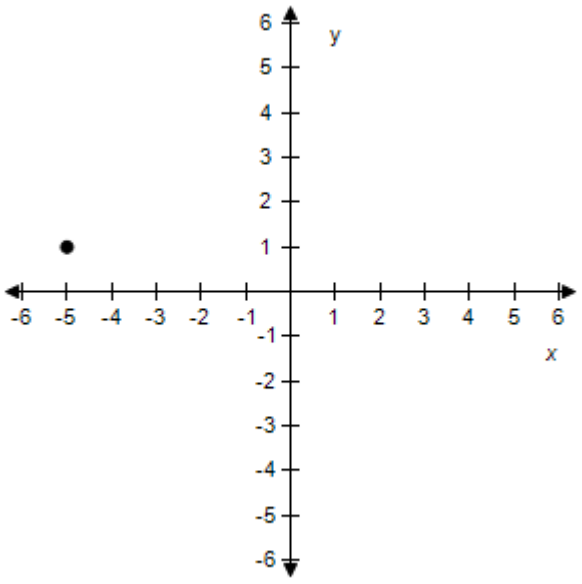
a.



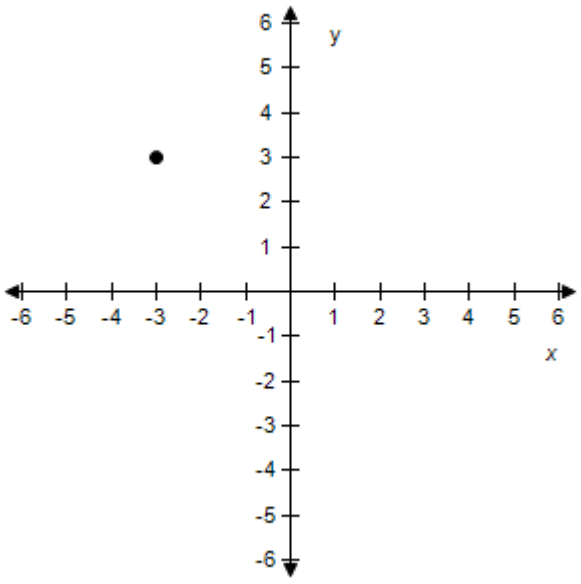
b.



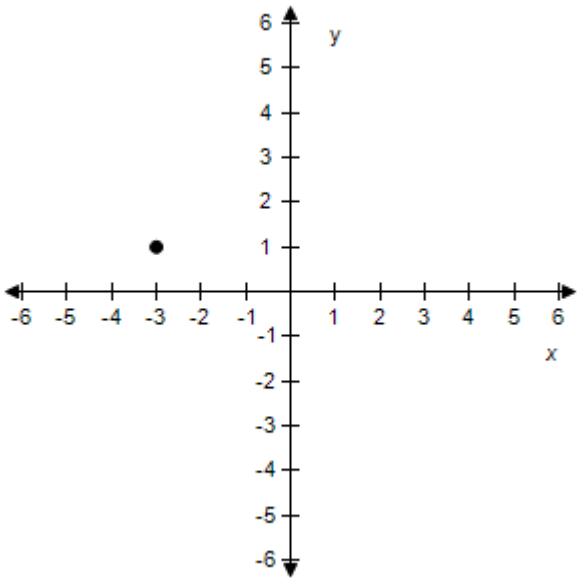
c.



d.



e.



ANSWER: e
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/14/2014 4:45 AM

56. Find the coordinates of the point that is located 8 units below the *x*-axis and 3 units to the left of the *y*-axis.

a. (–8, –3) b. (8, –3)
c. (–3, 8) d. (3, –8)
e. (–3, –8)

ANSWER: e
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 12/4/2014 11:45 PM

57. Find the distance between the points (4, –3) and (11, –3).

a. 10 b. $\sqrt{7}$
c. 3 d. $\sqrt{10}$
e. 7

ANSWER: e
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)

Section 1.1 - Rectangular Coordinates

HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 12/4/2014 11:55 PM

58. Find the distance between the points (4, –5) and (9, 0). Round the answer to the nearest tenth.

a. 7.1 b. 7.4
c. 7.3 d. 7.5
e. 6.9

ANSWER: a
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 12/5/2014 12:04 AM

59. Find the midpoint of the line segment joining the points (3, 6) and (9, –4).

a. (6, –10) b. (12, 2)
c. (6, 1) d. (–3, 5)
e. (3, –5)

ANSWER: c
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 12/5/2014 12:13 AM

60. Find the midpoint of the line segment joining the points (5.5, 4.3) and (13.6, –1.2).

a. (19.1, 3.1) b. (8.1, –5.5)
c. (–4.05, 2.75) d. (9.55, 1.55)
e. (4.05, –2.75)

ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 12/5/2014 12:19 AM

61. Let M denote the midpoint of the line segment joining (4, 3) and (11, 6). Find the distance from M to the point (–6, –5). Round the answer to the nearest tenth.

a. 16.7 b. 16.1
c. 16.5 d. 15.9
e. 16.2

Section 1.1 - Rectangular Coordinates

ANSWER: c
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 12/5/2014 12:25 AM

62. Let M denote the midpoint of the line segment joining (2, 3) and (7, 6). Find the midpoint between M and (–6, –4).

a. (2, 0.25) b. (–0.75, 0.25)
c. (–2, –0.5) d. (4.5, 4.5)
e. (0.5, 1)

ANSWER: b
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 12/5/2014 3:13 AM

63. Let S represent the midpoint between (5, 3) and (–5, –7). Let T represent the midpoint between (5, 3) and S. Find the coordinates of T.

a. (–2.5, –4.5) b. (0, –2)
c. (0, 0.5) d. (2.5, 0.5)
e. (2.5, –2)

ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 12/5/2014 3:36 AM

64. Write the standard form of the equation of the circle with center (5, –7) and radius 5.

a. $(x+5)^2+(y-7)^2=5$ b. $(x-5)^2+(y+7)^2=5$
c. $(x-5)^2+(y+7)^2=25$ d. $(x+5)^2+(y-7)^2=25$
e. $(x-5)^2+(y-7)^2=25$

ANSWER: c
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 12/5/2014 4:03 AM

65. Write the standard form of the equation of the circle with center (3, –2) and solution point (–2, 3).

a. $(x+3)^2+(y-2)^2=50$ b. $(x-3)^2+(y+2)^2=\sqrt{50}$

c. $(x-3)^2+(y-2)^2=50$ d. $(x+3)^2+(y-2)^2=\sqrt{50}$

e. $(x-3)^2+(y+2)^2=50$

ANSWER: e
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 12/5/2014 4:09 AM

66. Write the standard form of the equation of the circle which has (–5, 4) and (–1, 8) as endpoints of a diameter.

a. $(x+3)^2+(y-6)^2=\sqrt{8}$ b. $(x-3)^2+(y+6)^2=8$

c. $(x-3)^2+(y-6)^2=8$ d. $(x-3)^2+(y-6)^2=\sqrt{8}$

e. $(x+3)^2+(y-6)^2=8$

ANSWER: e
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 12/5/2014 4:25 AM

67. Write the standard form of the equation of the circle tangent to the *y*-axis and with center (–3, –6).

a. $(x+3)^2+(y-6)^2=9$ b. $(x+3)^2+(y-6)^2=3$

c. $(x-3)^2+(y-6)^2=9$ d. $(x+3)^2+(y+6)^2=3$

e. $(x+3)^2+(y+6)^2=9$

ANSWER: e
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 12/5/2014 4:38 AM

68. Find the center and radius of the circle with equation $(x+7)^2+(y-2)^2=25$.

a. Center: (7, 2)
Radius: 5

b. Center: (–7, 2)
Radius: 25

c. Center: (7, –2)
Radius: 25

d. Center: (7, –2)
Radius: 5

e. Center: (–7, 2)

Radius: 5

ANSWER: e
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 12/5/2014 4:42 AM

69. The point A has coordinates $(-3, 5)$. If A is moved 3 units upward 6 units to the left, what are the new coordinates of A ?

a. $(0, -1)$ b. $(3, 8)$
c. $(0, 11)$ d. $(-9, 8)$
e. $(3, 2)$

ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 12/5/2014 4:47 AM

Section 1.2 - Graphs of Equations

1. Determine which of the following point lies on the graph of the equation.

$y = \sqrt{x + 62}$

a. (2, 10)
b. (2, 9)
c. (2, 8)
d. (9, 8)
e. (3, 8)

ANSWER: c
POINTS: 1
REFERENCES: 1.1.7
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 9/15/2014 9:03 AM

2. Determine which of the following point lies on the graph of the equation.

$y = |x - 2| + 4$

a. (5, 7)
b. (5, 9)
c. (5, 8)
d. (8, 7)
e. (6, 7)

ANSWER: a
POINTS: 1
REFERENCES: 1.1.11
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 9/15/2014 9:05 AM

3. Write the standard form of the equation of the circle with the given characteristics.

Endpoints of a diameter: (2, 2), (12, 2)

a. $(x - 7)^2 + (y - 2)^2 = 5$

b. $(x - 2)^2 + (y - 7)^2 = 25$

c. $(x + 2)^2 + (y + 7)^2 = 25$

d. $(x + 7)^2 + (y + 2)^2 = 25$

e. $(x-7)^2+(y-2)^2=25$

ANSWER: e
POINTS: 1
REFERENCES: 1.1.68
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/8/2015 11:33 AM

4. Write the standard form of the equation of the circle with the given characteristics.

Center:(3, 1); Radius: 7

a. $(x-3)^2+(y-1)^2=49$

b. $(x-3)^2+(y-1)^2=7$

c. $(x-3)^2+(y-1)^2+7=0$

d. $x^2+y^2=0$

e. $(x-3)^2+(y-1)^2-49=0$

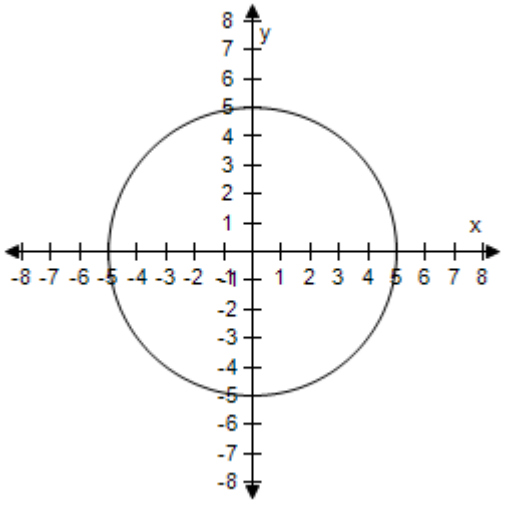
ANSWER: a
POINTS: 1
REFERENCES: 1.1.63
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 9/15/2014 9:16 AM

5. Find the center and radius of the circle, and sketch its graph.

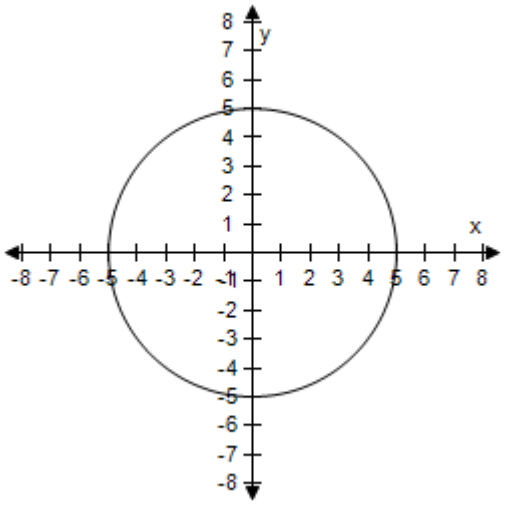
$x^2+y^2=16$

a. Centre (0, 0), Radius 16

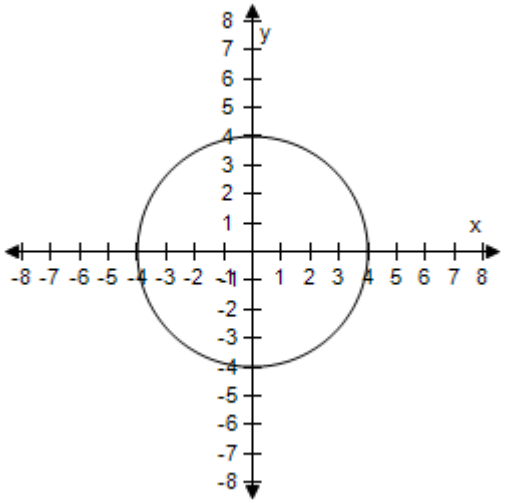
Section 1.2 - Graphs of Equations



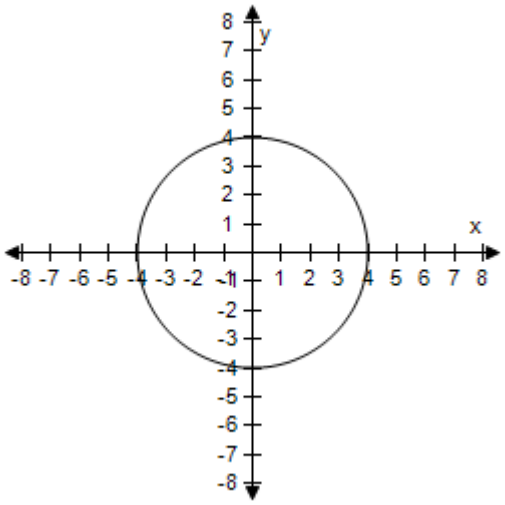
b. Centre (0, 0), Radius 4



c. Centre (0, 0), Radius 4

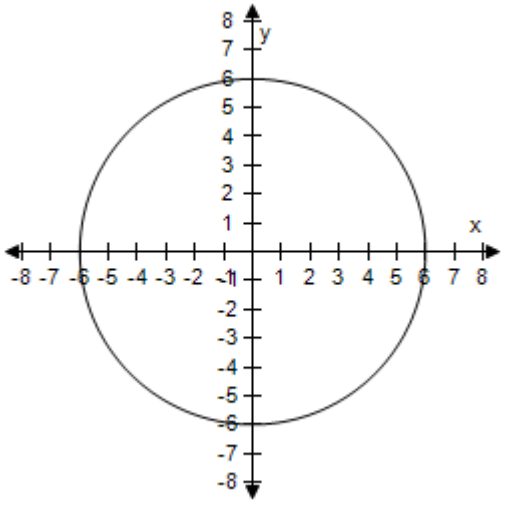


d. Centre (0, 0), Radius 16



e. Centre (0, 0), Radius 4

Section 1.2 - Graphs of Equations

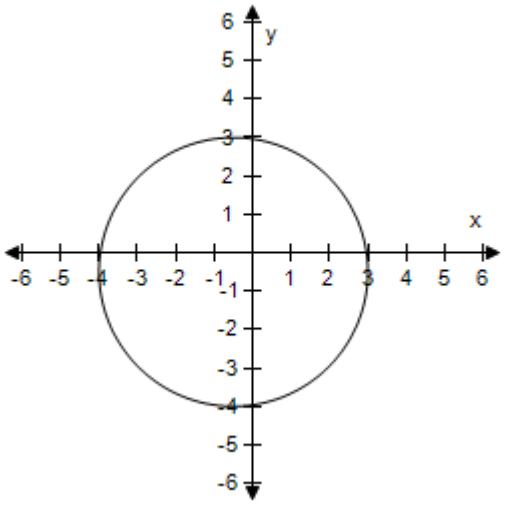


ANSWER: c
POINTS: 1
REFERENCES: 1.1.69
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 9/15/2014 9:33 AM

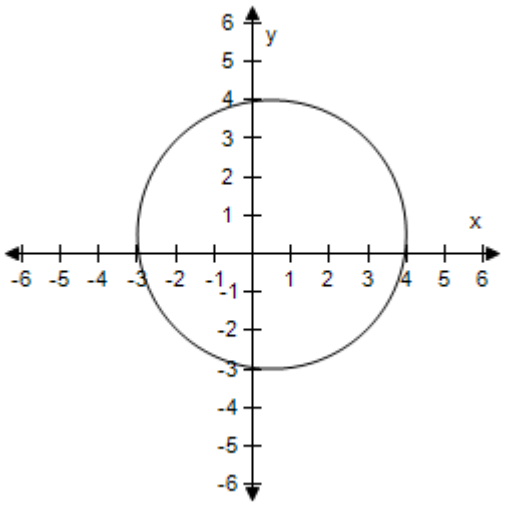
6. Find the center and radius of the circle, and sketch its graph.

$$\left(x-\frac{1}{2}\right)^2+\left(y-\frac{1}{2}\right)^2=\frac{49}{4}$$

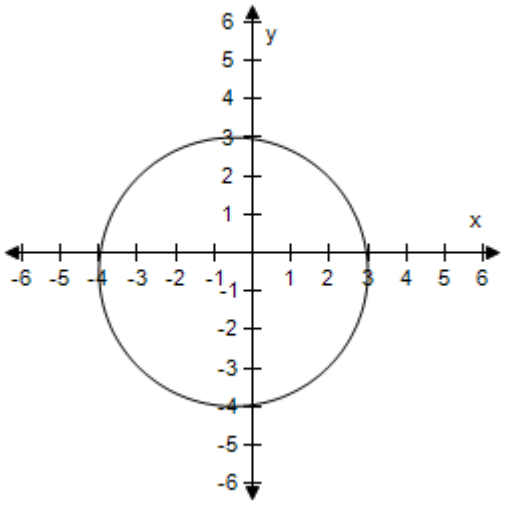
a. Centre $\left(\frac{1}{2}, \frac{1}{2}\right)$, Radius $\frac{49}{4}$



b. Centre $\left(\frac{1}{2}, \frac{1}{2}\right)$, Radius $\frac{49}{4}$

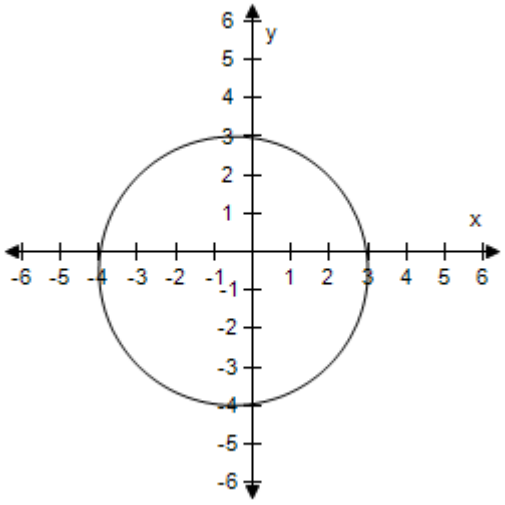


c. Centre $\left(\frac{1}{2}, \frac{1}{2}\right)$, Radius $\frac{7}{2}$

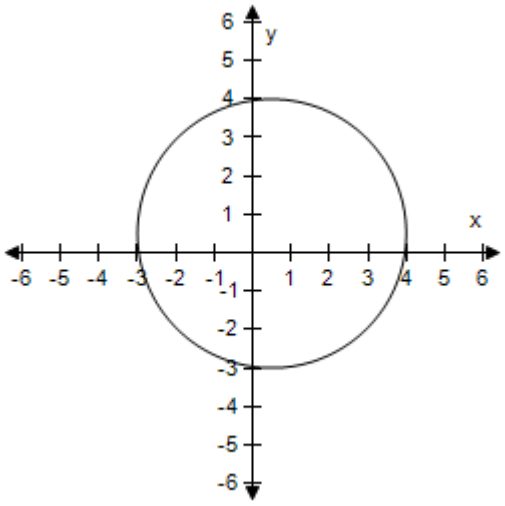


d. Centre $\left(-\frac{1}{2}, -\frac{1}{2}\right)$, Radius $\frac{7}{4}$

Section 1.2 - Graphs of Equations



e. Centre $\left(\frac{1}{2}, \frac{1}{2}\right)$, Radius $\frac{7}{2}$



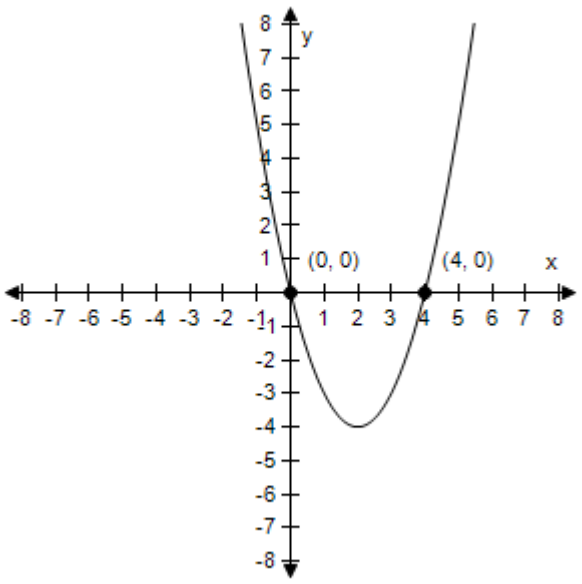
ANSWER: e
POINTS: 1
REFERENCES: 1.1.73
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/8/2015 11:37 AM

7. Identify any intercepts and test for symmetry. Then sketch the graph of the equation.

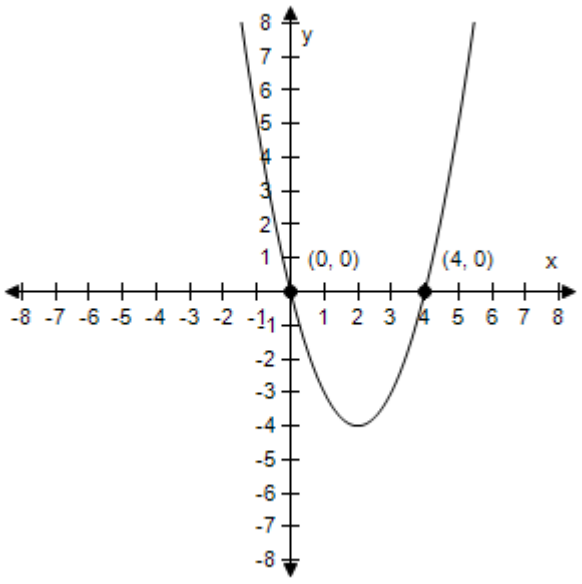
$y = x^2 - 4x$

a. x-intercept : (0, 0), (4, 0)

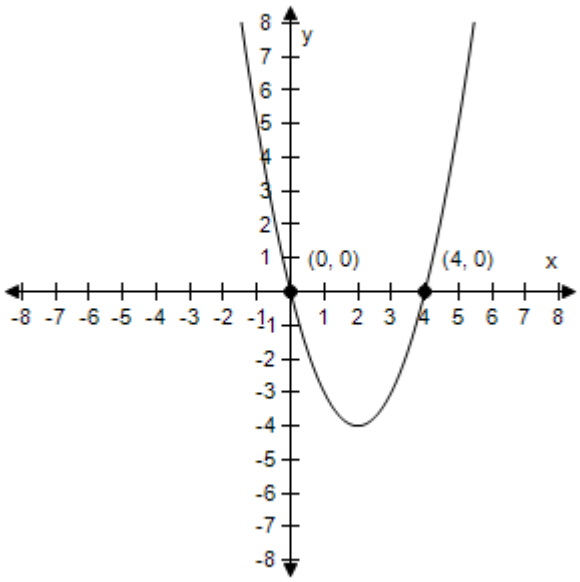
y-intercept : (0, 0)
No symmetry



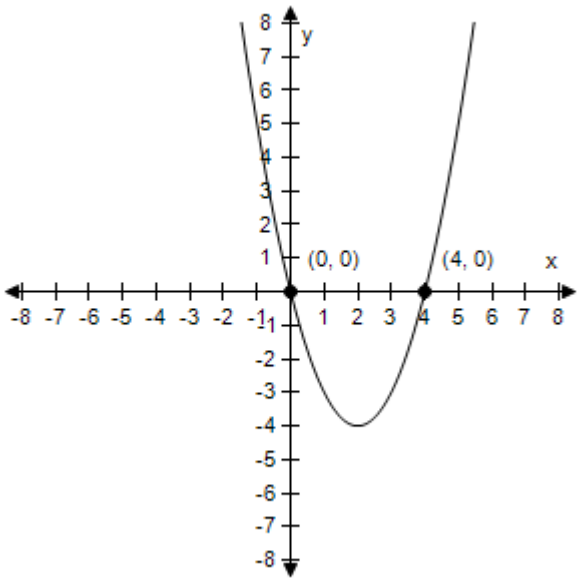
b. *x*-intercept : (0, 0), (–4, 0)
y-intercept : (0, 1)
No symmetry



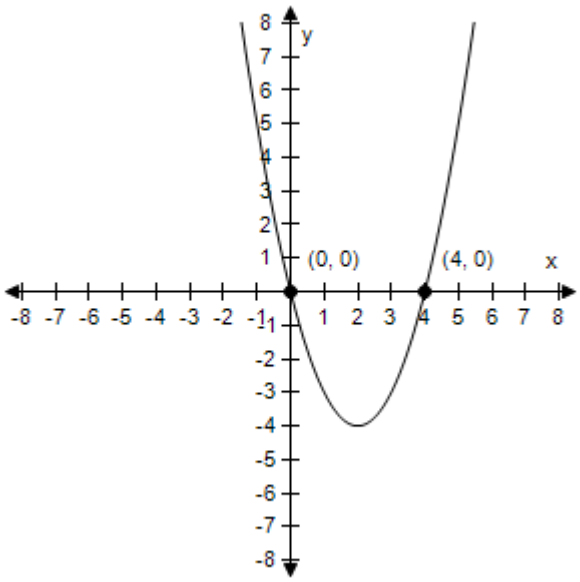
c. *x*-intercept : (4, 0), (4, 0)
y-intercept : (0, 1)
No symmetry



d. *x*-intercept : (0, 0), (4, 0)
y-intercept : (0, 1)
No symmetry



e. *x*-intercept : (0, 0), (4, 0)
y-intercept : (0, –1)
No symmetry



ANSWER: a
POINTS: 1
REFERENCES: 1.1.39
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 9/15/2014 10:12 AM

8. Write the standard form of the equation of the circle with the given characteristics.

Center: (6, 1); Solution point: (5, 9)

a. $(x+6)^2+(y+1)^2=65$

b. $(x-6)^2+(y+1)^2-65=0$

c. $(x+6)^2+(y+1)^2+65=0$

d. $(x-6)^2+(y-1)^2=65$

e. $(x-1)^2+(y-6)^2=65$

ANSWER: d
POINTS: 1
REFERENCES: 1.1.66
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 9/15/2014 10:28 AM

Section 1.2 - Graphs of Equations

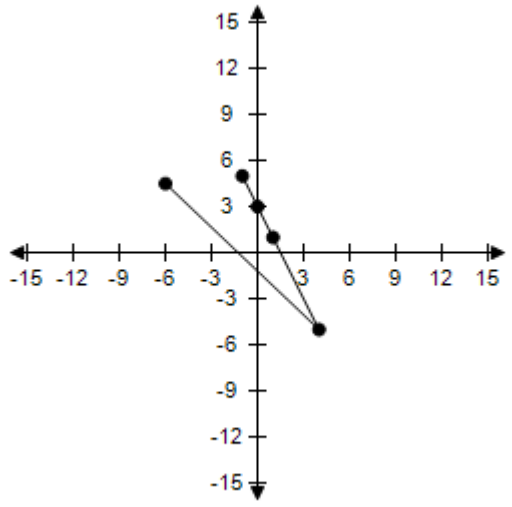
9. Complete the table. Use the resulting solution points to sketch the graph of the equation.

$y = -2x + 3$

x	–1	0	1	4	$\frac{9}{2}$
y					
(x, y)					

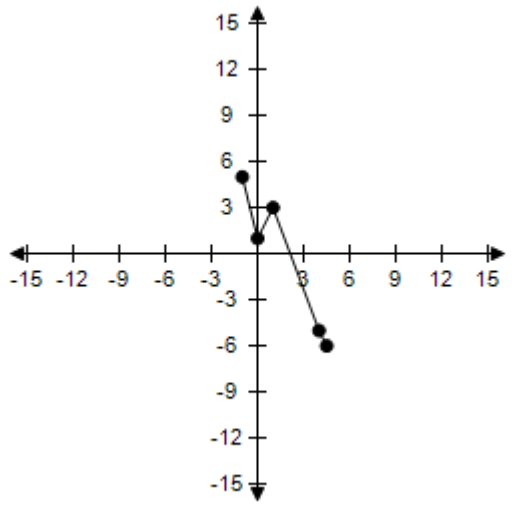
a.

x	–1	0	1	4	$\frac{9}{2}$
y	5	3	1	–5	–6
(x, y)	(–1, 5)	(0, 3)	(1, 1)	(4, –5)	$(\frac{9}{2}, 9)$



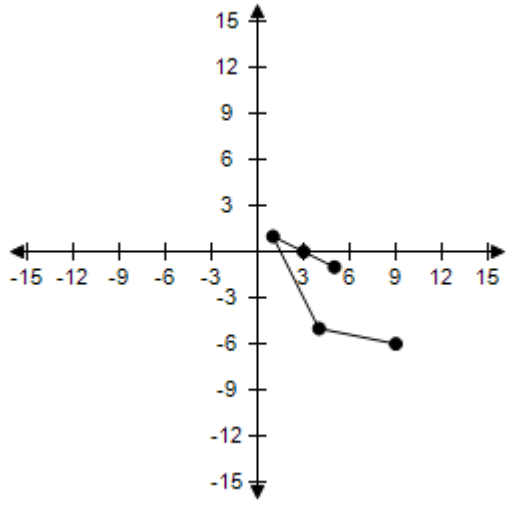
b.

x	–1	0	1	4	$\frac{9}{2}$
y	5	3	1	–5	–6
(x, y)	(–1, 5)	(0, 1)	(1, 3)	(4, –5)	$(\frac{9}{2}, -6)$



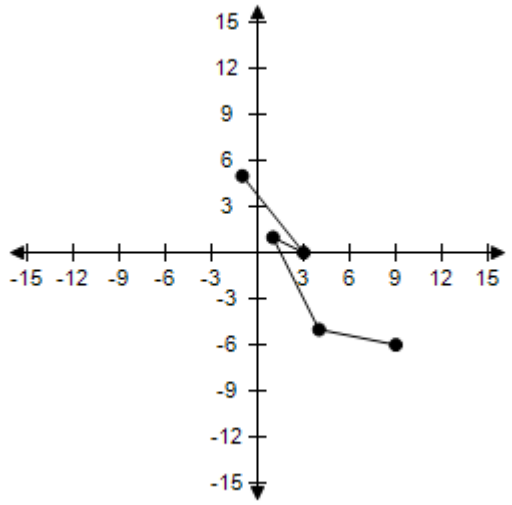
c.

x	–1	0	1	4	$\frac{9}{2}$
y	5	3	1	–5	–6
(x, y)	(5, –1)	(3, 0)	(1, 1)	(4, –5)	$(\frac{9}{2}, -6)$



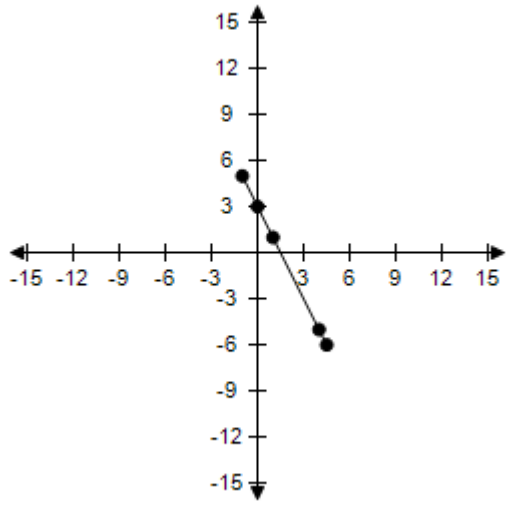
d.

x	–1	0	1	4	$\frac{9}{2}$
y	5	3	1	–5	–6
(x, y)	(–1, 5)	(3, 0)	(1, 1)	(4, –5)	$(\frac{9}{2}, -6)$



e.

x	–1	0	1	4	$\frac{9}{2}$
y	5	3	1	–5	–6
(x, y)	(–1, 5)	(0, 3)	(1, 1)	(4, –5)	$(\frac{9}{2}, -6)$



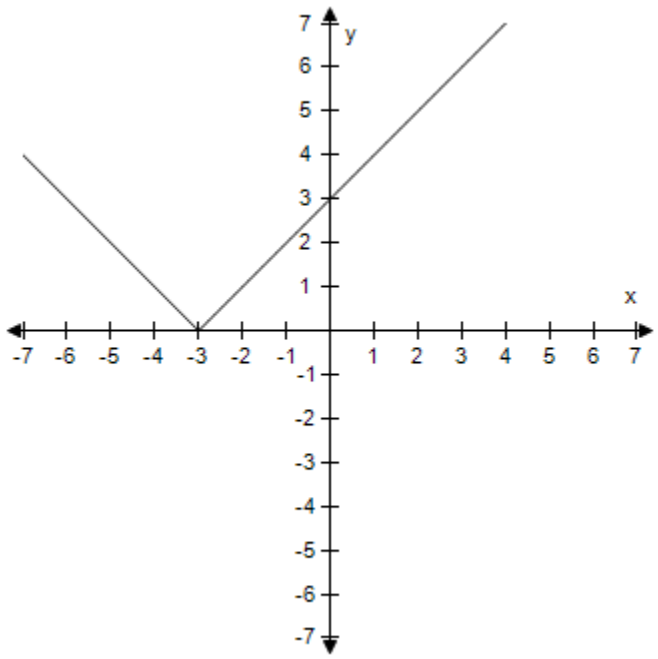
ANSWER: e
POINTS: 1
REFERENCES: 1.1.15
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM

Section 1.2 - Graphs of Equations

DATE MODIFIED: 5/8/2015 11:47 AM

10. Graphically estimate the x- and y-intercepts of the graph.

$y = |x + 3|$



a. x-intercept: $(-3, 0)$
   y-intercept: $(0, 3)$
b. x-intercept: $(0, -3)$
   y-intercept: $(3, 0)$
c. x-intercept: $(0, -3)$
   y-intercept: $(0, 3)$
d. x-intercept: $(3, 0)$
   y-intercept: $(3, 0)$
e. x-intercept: $(0, 3)$
   y-intercept: $(3, 0)$

ANSWER: a
POINTS: 1
REFERENCES: 1.1.21
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 9/15/2014 11:25 AM

11. Determine which of the following point lies on the graph of the equation.

Section 1.2 - Graphs of Equations

$x^2 + y^2 = 5$

a. (3, 1)
b. (2, 3)
c. (4, 1)
d. (2, 1)
e. (2, 2)

ANSWER: d
POINTS: 1
REFERENCES: 1.1.13
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 9/15/2014 11:28 AM

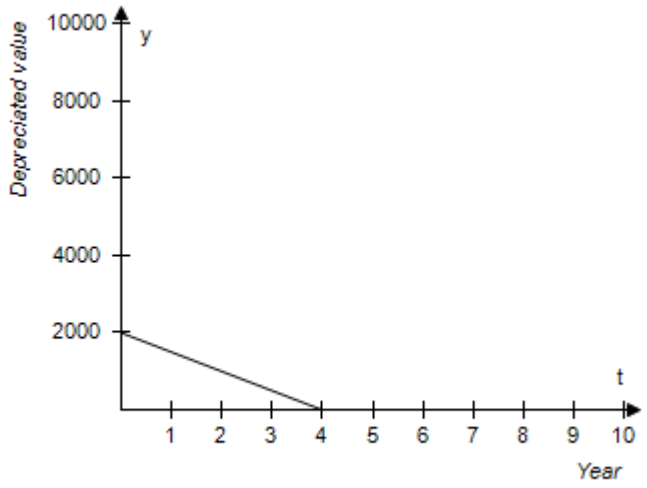
12. Which of the following graphs are symmetric about the *y*-axis?

a. $y = x^7 - x^6 + 18$
b. $y = x^7 - x^{12} + 18$
c. $y = x^9 - x^7 + 18$
d. $y = x^{12} - x^6 + 18$
e. $y = x^9 + x^7 + 18$

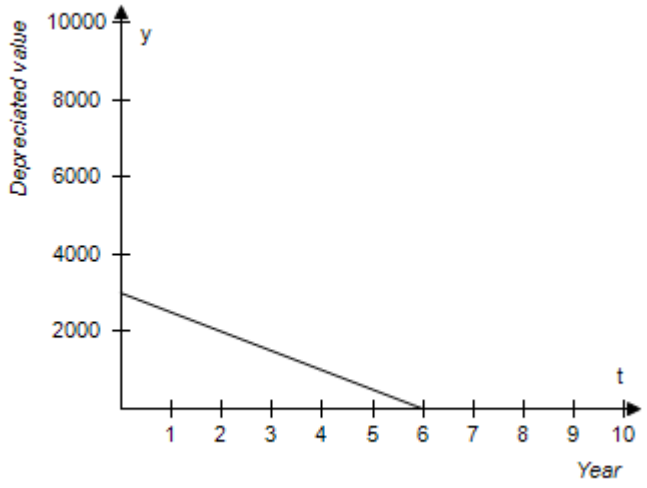
ANSWER: d
POINTS: 1
REFERENCES: 1.1.28
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 9/15/2014 11:31 AM

13. You purchase an all-terrain vehicle (ATV) for $2,000. The depreciated value y after t years is given by $y = 2{,}000 - 500t$, $0 \le t \le 6$. Sketch the graph of the equation.

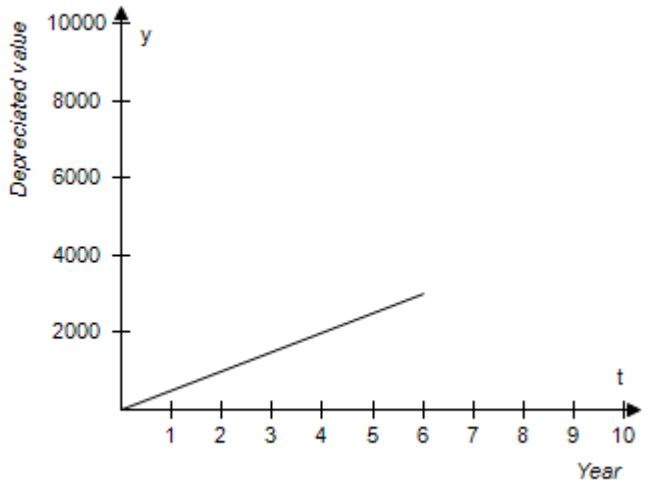
a.



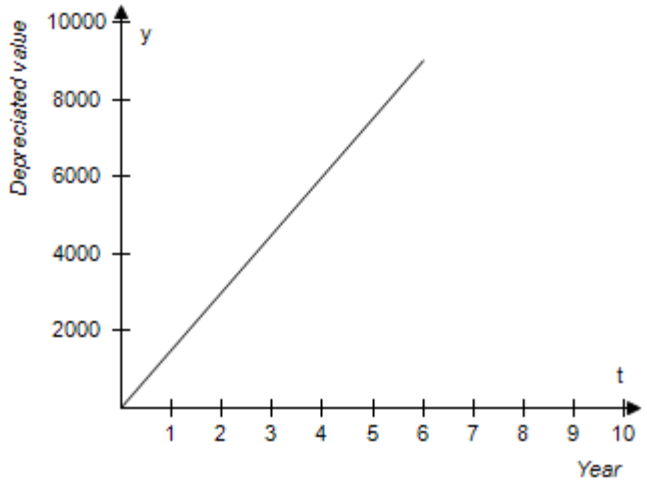
b.



c.

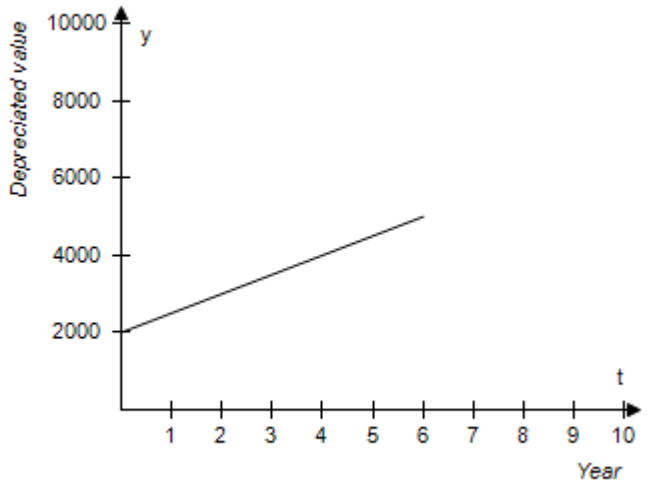


d.



e.

Section 1.2 - Graphs of Equations



ANSWER: a
POINTS: 1
REFERENCES: 1.1.76
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 9/19/2014 4:40 AM

14. The resistance y (in ohms) of 1,000 feet of solid copper wire at 68 degrees Fahrenheit can be approximated by the model

$$y = \frac{10{,}770}{x^2} - 0.37, \quad 5 \le x \le 100$$

where x is the diameter of the wire in mils (0.001 inch).

Complete the table.

x	15	45	55	70	75
y					

Round the answer to two decimal places.

a.

x	15	45	55	70	75
y	47.50	1.54	3.19	1.83	4.95

b.

x	15	45	55	70	75
y	47.50	4.95	3.19	1.54	1.83

c.

x	15	45	55	70	75
y	47.50	4.95	1.83	3.19	1.54

d.

x	15	45	55	70	75
y	47.50	3.19	4.95	1.83	1.54

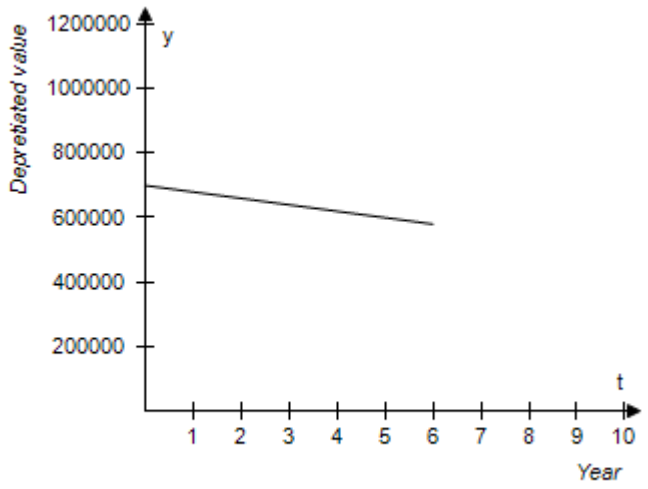
e.

x	15	45	55	70	75
y	47.50	4.95	3.19	1.83	1.54

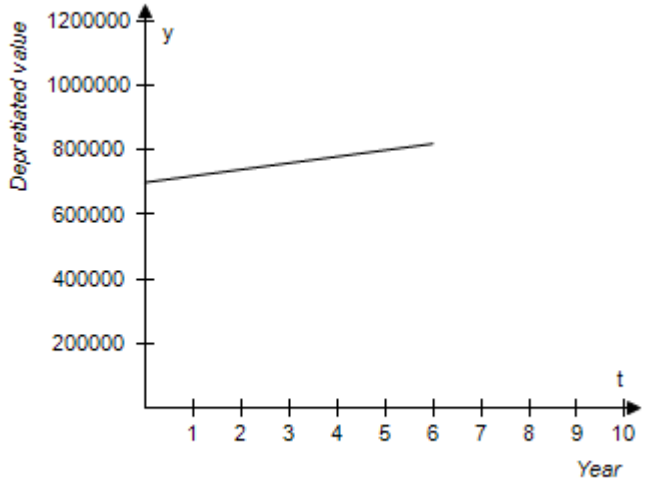
ANSWER: e
POINTS: 1
REFERENCES: 1.1.80
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/21/2014 2:50 AM

15. A hospital purchases a new magnetic resonance imaging (MRI) machine for $600,000. The depreciated value y (reduced value)after t years is given by $y = 600{,}000 - 20{,}000t$, $0 \le t \le 6$. Sketch the graph of the equation.

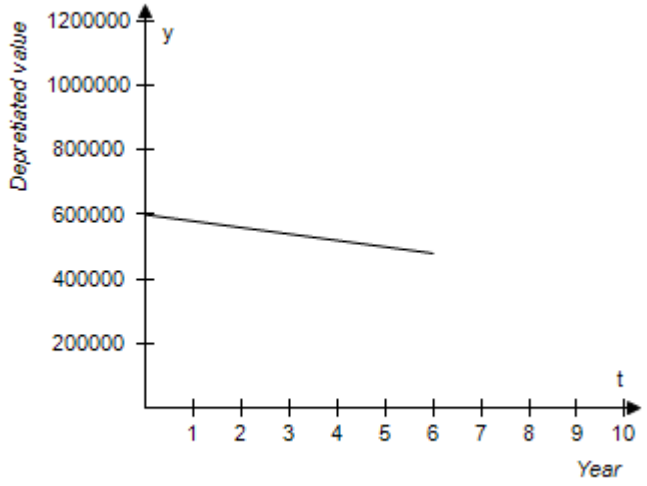
a.



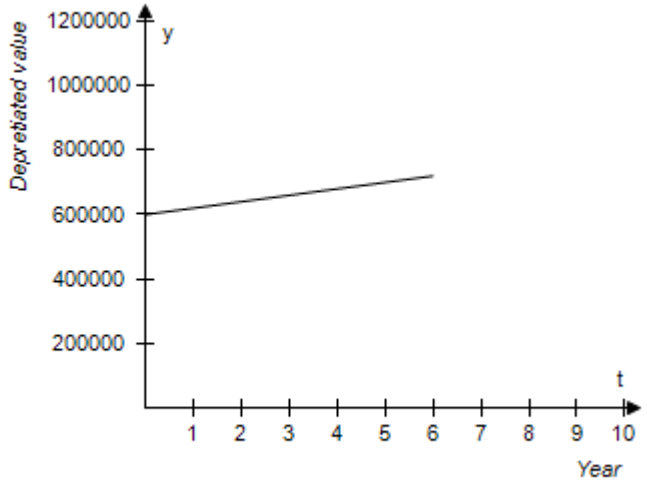
b.



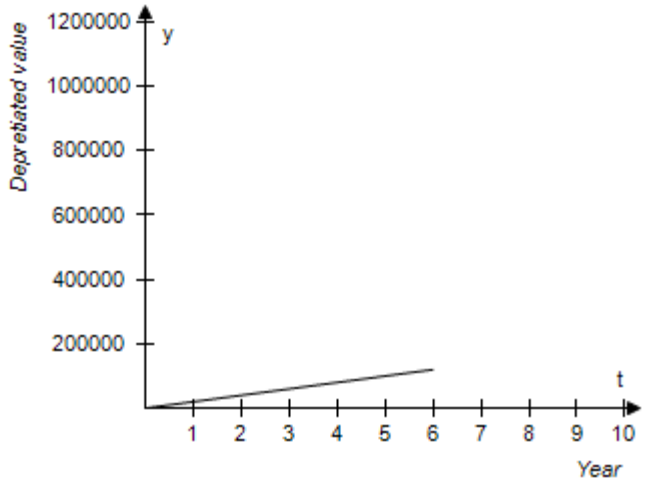
c.



d.



e.



ANSWER: c
POINTS: 1
REFERENCES: 1.1.75
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 9/19/2014 4:55 AM

16. Determine which of the following point lies on the graph of the equation.

$$y = \frac{1}{3}x^3 - 3x^2$$

a. (6, 0)
b. (7, 6)

c. (7, 6)
d. (6, 7)
e. (6, 8)

ANSWER: a
POINTS: 1
REFERENCES: 1.1.14
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/8/2015 11:58 AM

17. Complete the table.

$$y = \frac{3}{4}x - 1$$

x	–12	–8	4	12	16
y					
(x,y)					

a.

x	–12	–8	4	12	16
y	–10	–7	2	8	11
(x,y)	(–10, –12)	(–7, –8)	(4, 2)	(12, 8)	(16, 11)

b.

x	–12	–8	4	12	16
y	–10	–7	2	8	11
(x,y)	(–12, –10)	(–8, –7)	(2, 4)	(12, 8)	(11, 16)

c.

x	–12	–8	4	12	16
y	–10	–7	2	8	11
(x,y)	(–12, –10)	(–7, –8)	(2, 4)	(12, 8)	(16, 11)

d.

x	–12	–8	4	12	16
y	–10	–7	2	8	11
(x,y)	(–12, –10)	(–8, –7)	(4, 2)	(12, 8)	(16, 11)

e.

x	–12	–8	4	12	16
y	–10	–7	2	8	11
(x,y)	(–12, –10)	(–8, 2)	(4, –7)	(12, 8)	(16, 11)

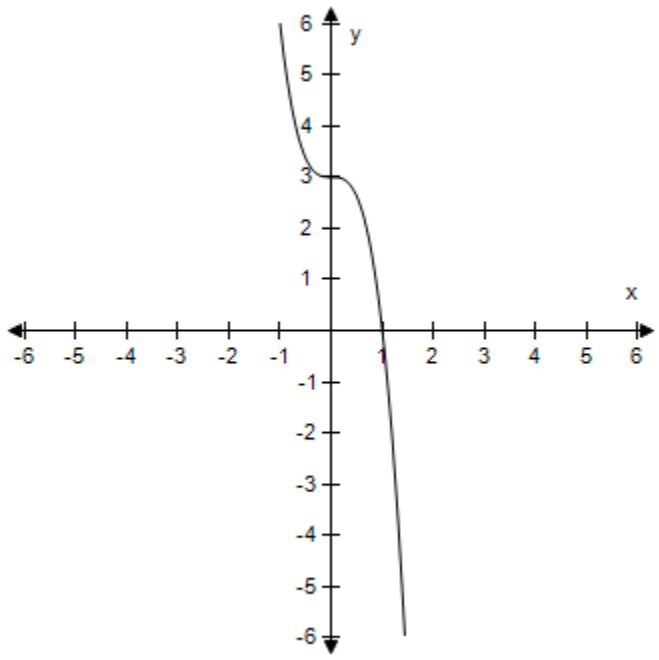
ANSWER: d
POINTS: 1
REFERENCES: 1.1.16
QUESTION TYPE: Multi-Mode (Multiple choice)

Section 1.2 - Graphs of Equations

HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 9/19/2014 5:34 AM

18. Graphically estimate the x- and y-intercepts of the graph.

$y = 3 - 3x^3$



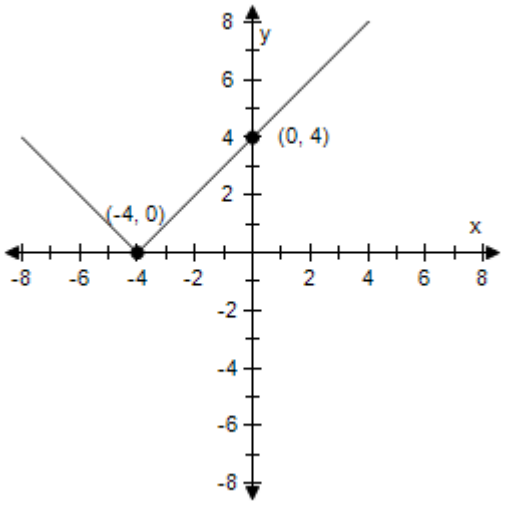
a. x-intercept: (0, 1)
   y-intercept: (0, 3)
b. x-intercept: (1, 0)
   y-intercept: (3, 0)
c. x-intercept: (0, 1)
   y-intercept: (3, 0)
d. x-intercept: (1, 0)
   y-intercept: (0, 3)
e. x-intercept: (1, 0)
   y-intercept: (0, –3)

ANSWER: d
POINTS: 1
REFERENCES: 1.1.23
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 9/19/2014 5:50 AM

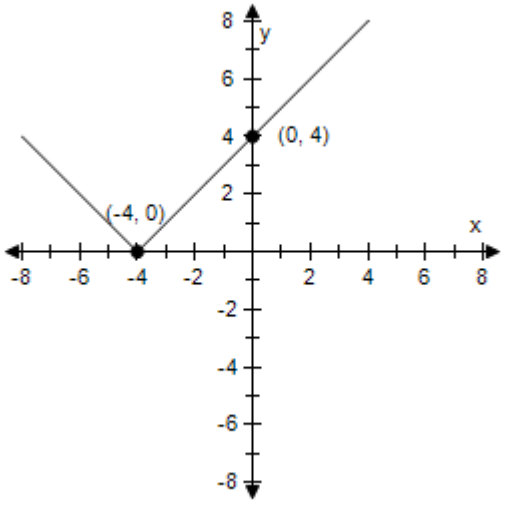
19. Identify any intercepts and test for symmetry. Then sketch the graph of the equation.

$y = |x - 4|$

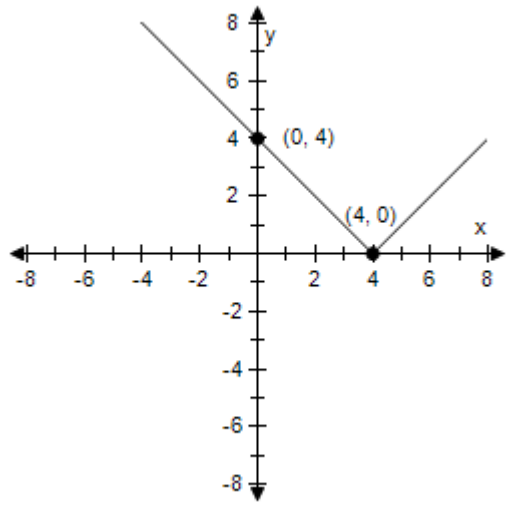
a. x- intercept: (4, 0)
y- intercept: (0, 4)
No symmetry



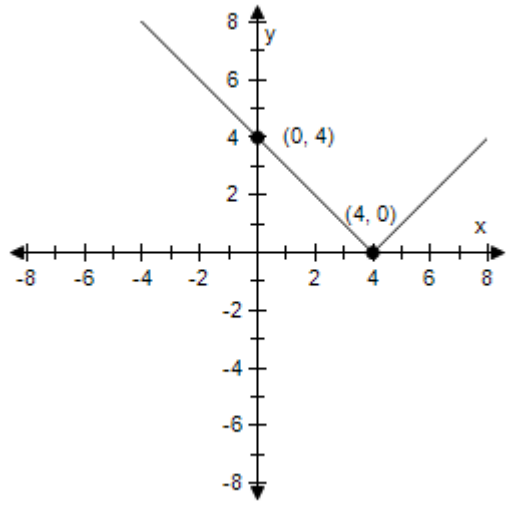
b. x- intercept: (-4, 0)
y- intercept: (0, 4)
No symmetry



c. x- intercept: (4, 0)
y- intercept: (4, 0)
No symmetry

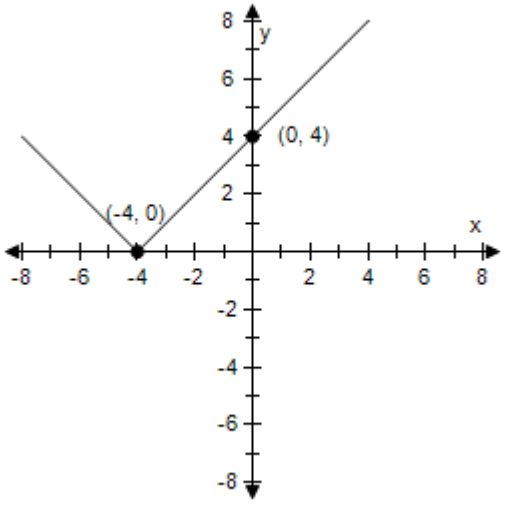


d. *x*- intercept: (4, 0)
y- intercept: (0, 4)
No symmetry



e. *x*- intercept: (4, 0)
y- intercept: (4, 0)
No symmetry

Section 1.2 - Graphs of Equations

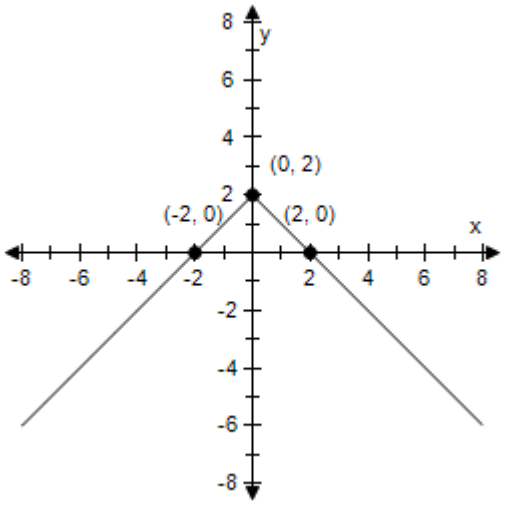


ANSWER: d
POINTS: 1
REFERENCES: 1.1.45
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/18/2014 2:44 AM

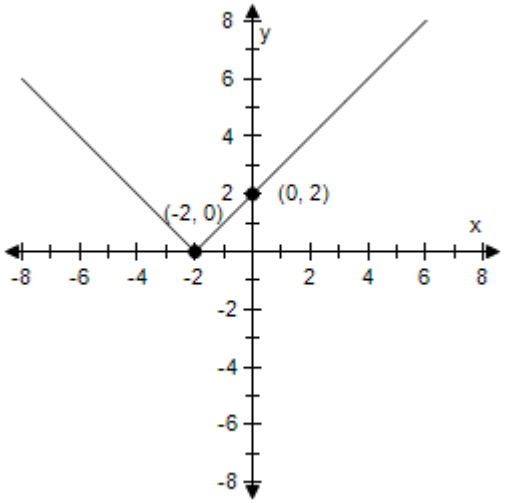
20. Identify any intercepts and test for symmetry. Then sketch the graph of the equation.

$y = 2 - |x|$

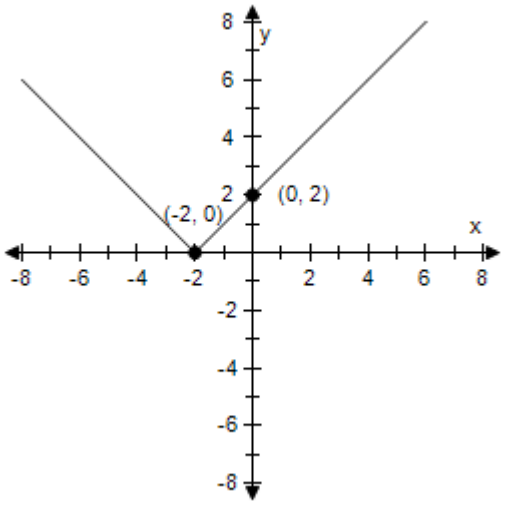
a. x- intercept: $(\pm 2, 0)$
y- intercept: $(0, 2)$
y-axis symmetry



b. x- intercept: (-2, 0)
y- intercept: (0, 2)
y-axis symmetry

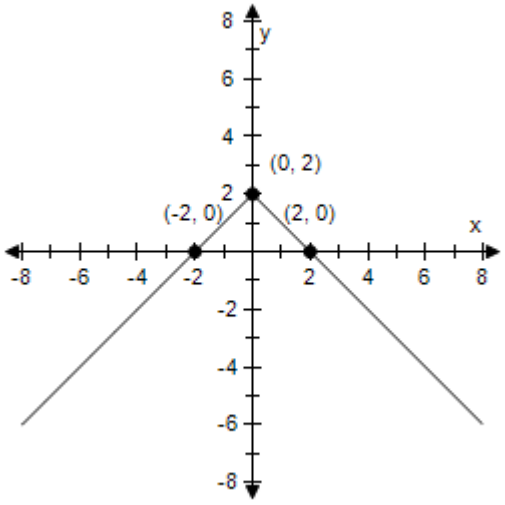


c. x- intercept: (2, 0)
y- intercept: (0, ±2)
y-axis symmetry

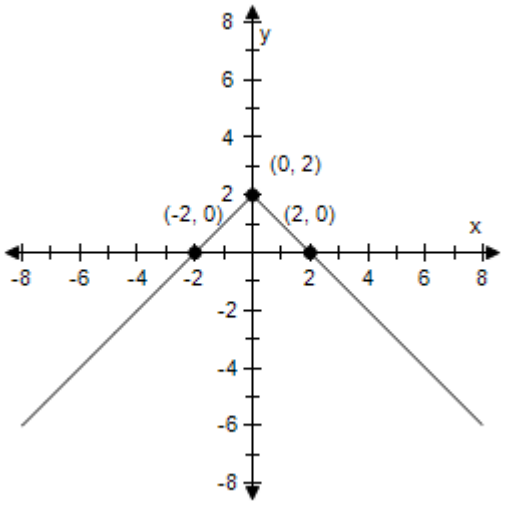


d. x- intercept: (2, 0)
y- intercept: (0, 2)
y-axis symmetry

Section 1.2 - Graphs of Equations



e. x- intercept: (-2, 0)
y- intercept: (0, 2)
y-axis symmetry



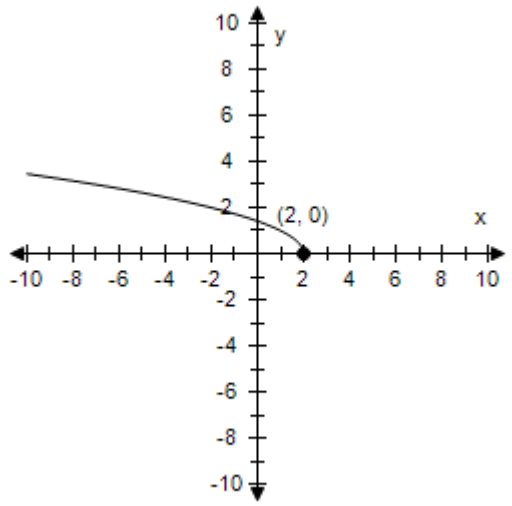
ANSWER: a
POINTS: 1
REFERENCES: 1.1.46
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/18/2014 2:53 AM

21. Identify any intercepts and test for symmetry. Then sketch the graph of the equation.

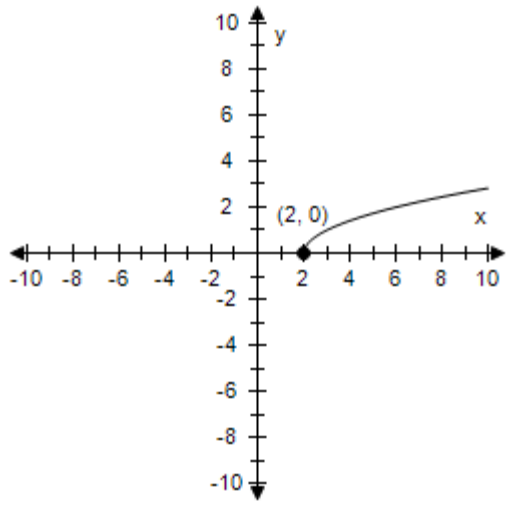
$y = \sqrt{x-2}$

a. x-intercept: (2, 0)

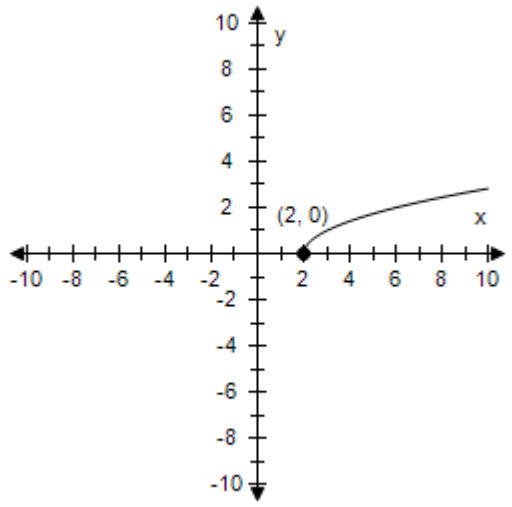
y-intercept: none
No symmetry



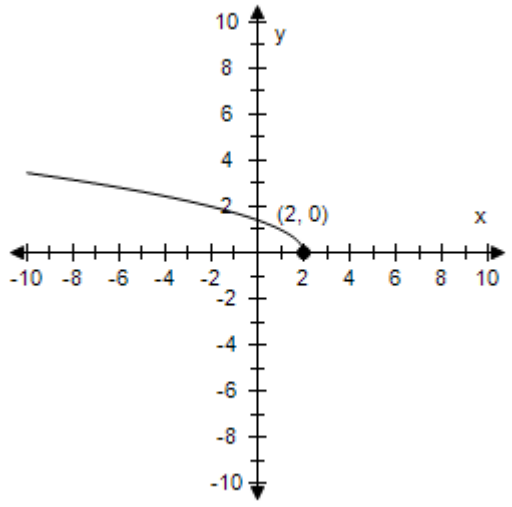
b. *x*-intercept: (2, 0)
y-intercept: none
No symmetry



c. *x*-intercept: (2, 0)
y-intercept: $(0, \sqrt{2})$
No symmetry

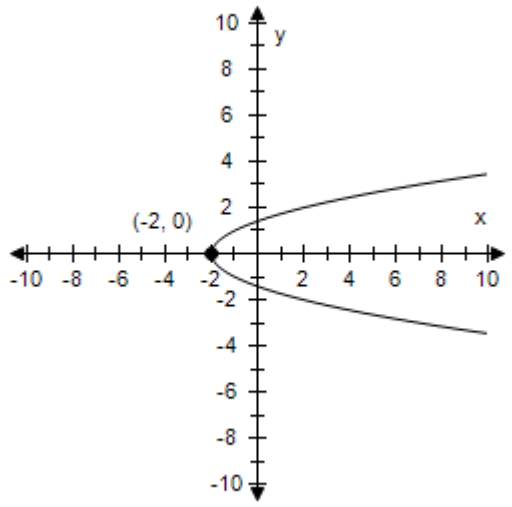


d. *x*-intercept: (-2, 0)
y-intercept: none
No symmetry



e. *x*-intercept: (-2, 0)
y-intercept: none
No symmetry

Section 1.2 - Graphs of Equations

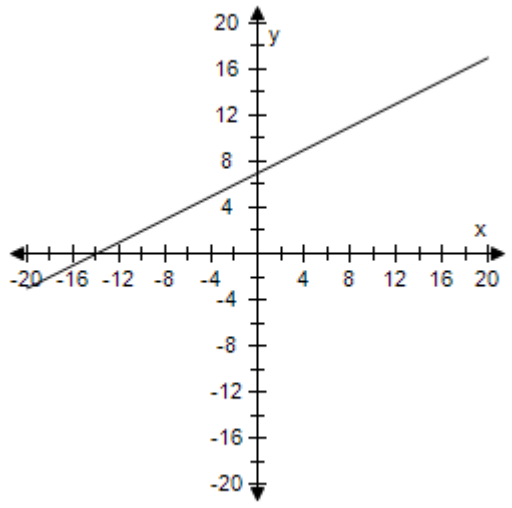


ANSWER: b
POINTS: 1
REFERENCES: 1.1.43
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/18/2014 2:40 AM

22. Use a graphing utility to graph the equation. Use a standard setting. Approximate any intercepts.

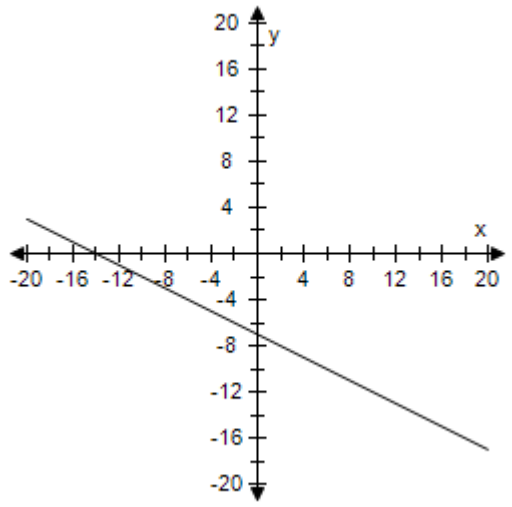
$$y = 7 - \frac{1}{2}x$$

a. Intercepts: (0, 7), (-14, 0)

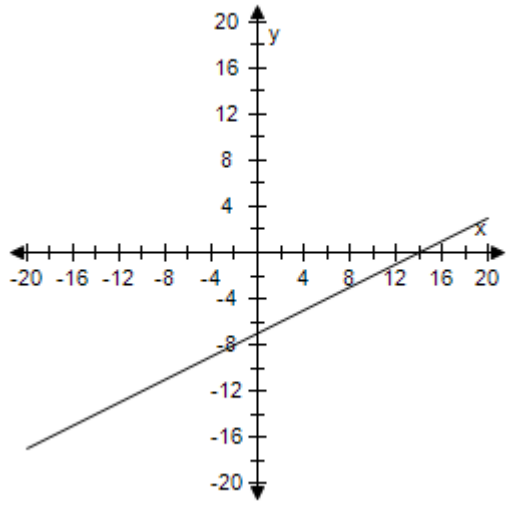


b. Intercepts: (-14, 0), (0, -7)

Section 1.2 - Graphs of Equations

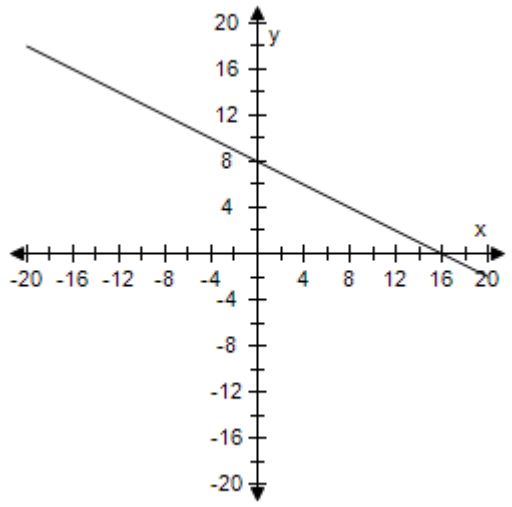


c. Intercepts: (14, 0), (0, -7)

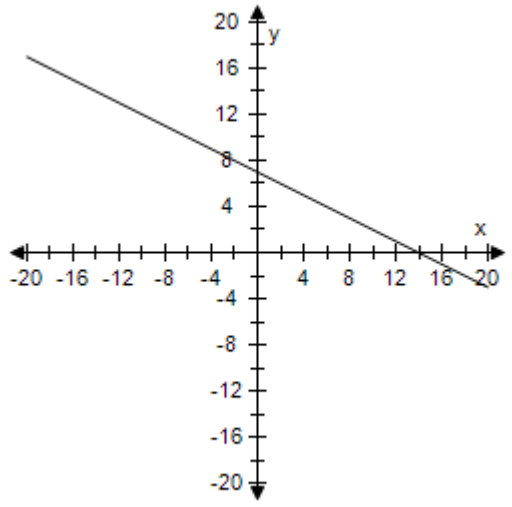


d. Intercepts: (0, 8), (15, 0)

Section 1.2 - Graphs of Equations



e. Intercepts: (14, 0), (0, 7)

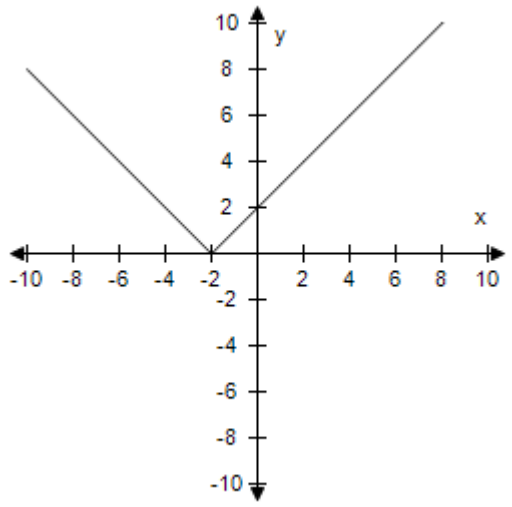


ANSWER: e
POINTS: 1
REFERENCES: 1.1.49
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/18/2014 2:34 AM

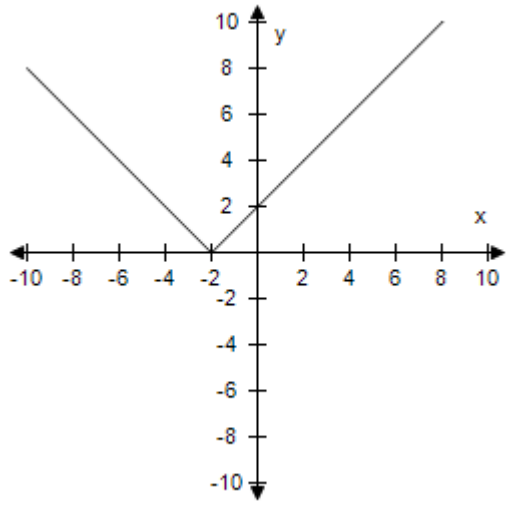
23. Use a graphing utility to graph the equation. Use a standard setting. Approximate any intercepts.

$y = |x + 2|$

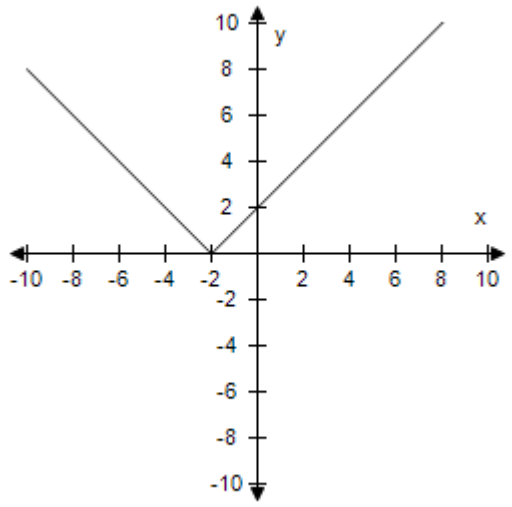
a. Intercepts: (0, -2), (0, 2)



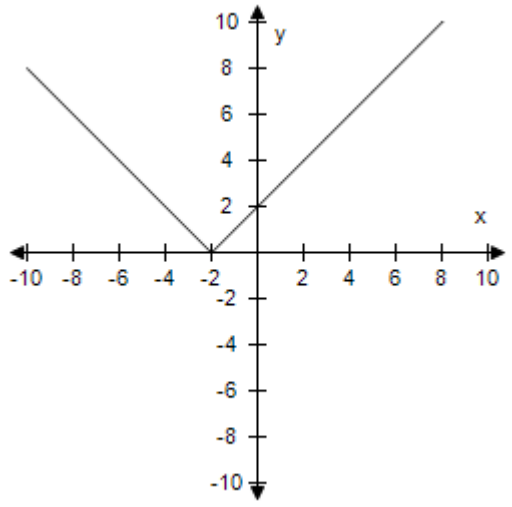
b. Intercepts: (-2, 0), (0, -2)



c. Intercepts: (2, 0), (0, 2)

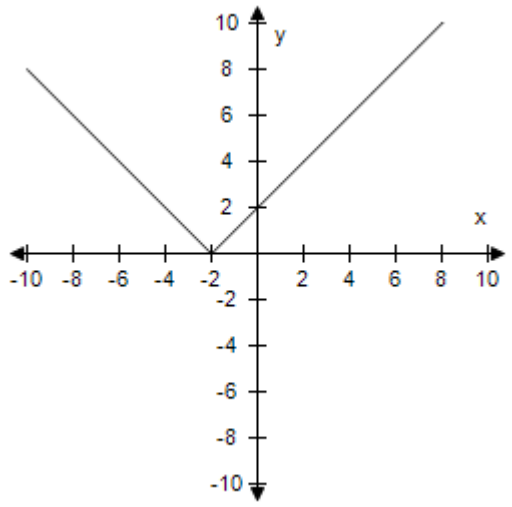


d. Intercepts: (-2, 0), (0, 2)



e. Intercepts: (-2, 0), (2, 0)

Section 1.2 - Graphs of Equations

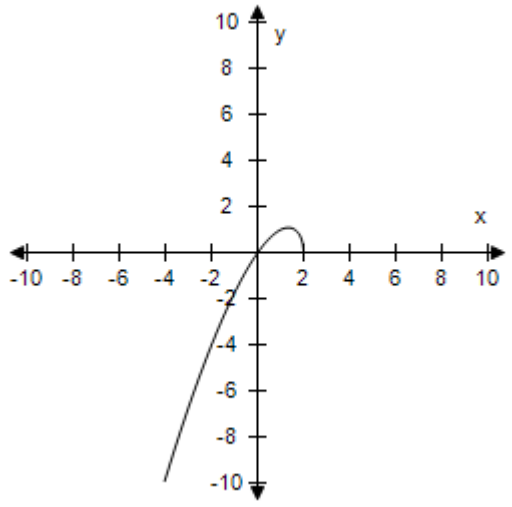


ANSWER: d
POINTS: 1
REFERENCES: 1.1.59
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/18/2014 2:29 AM

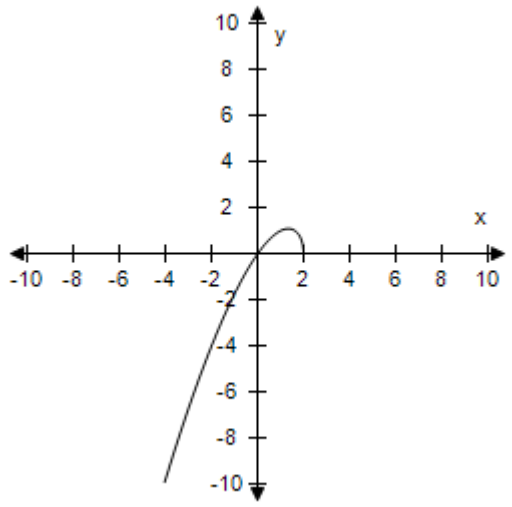
24. Use a graphing utility to graph the equation. Use a standard setting. Approximate any intercepts.

$y = x\sqrt{x+2}$

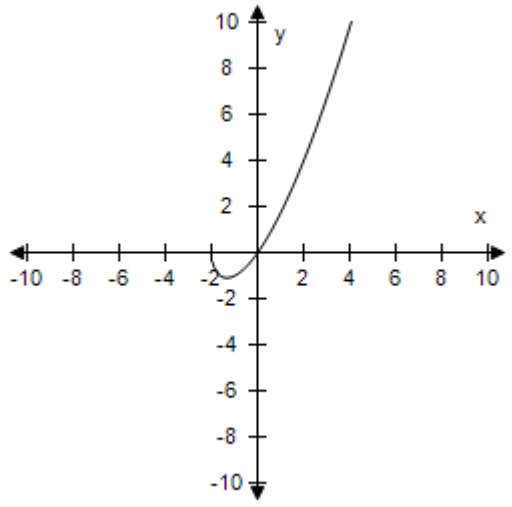
a. Intercepts: (0, 0), (-2, 0)



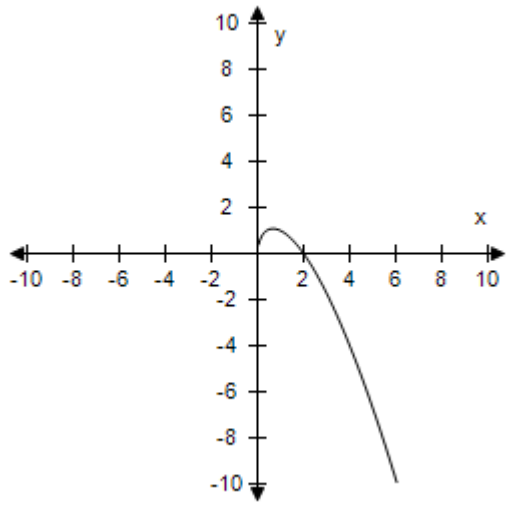
b. Intercepts: (0, 0), (2, 0)



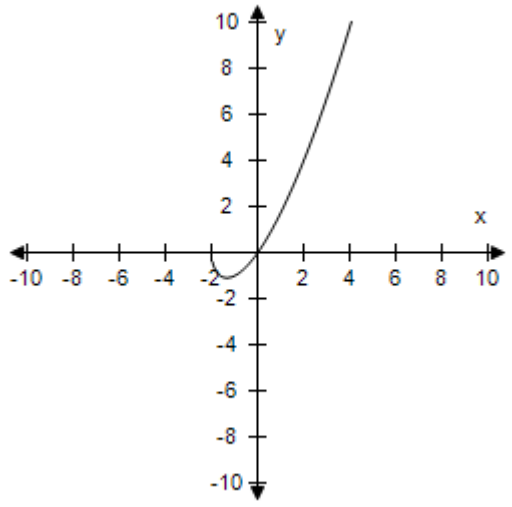
c. Intercepts: (0, 0), (-2, 0)



d. Intercepts: (0, 0), (-2, 0)



e. Intercepts: (0, 0), (6, 0)



ANSWER: c
POINTS: 1
REFERENCES: 1.1.57
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/8/2015 12:08 PM

25. Determine which of the following point lies on the graph of the equation.

$y = 3 - |x - 1|$

a. (4, 2)
b. (6, 0)
c. (5, 0)

d. (4, 0)
e. (4, 1)

ANSWER: d
POINTS: 1
REFERENCES: 1.1.10
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/18/2014 3:24 AM

26. Complete the table. Use the resulting solution points to sketch the graph of the equation.

$y = 5 - x^2$

x	4	5	–5	–2	–3
y					
(x,y)					

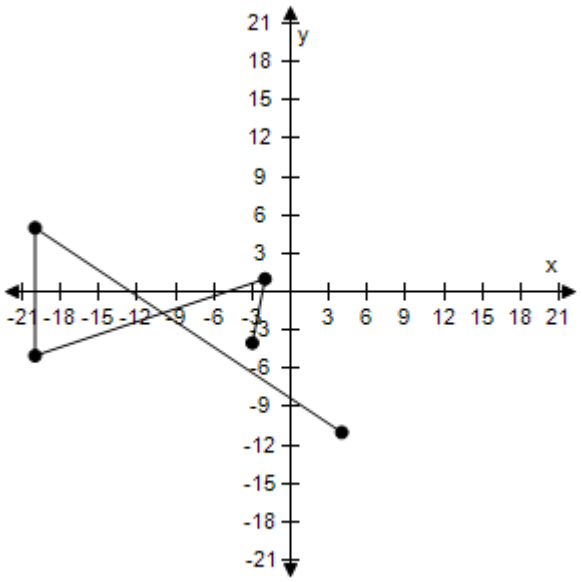
x	4	5	–5	–2	–3
y					
(x,y)					

x	4	5	–5	–2	–3
y					
(x,y)					

a.

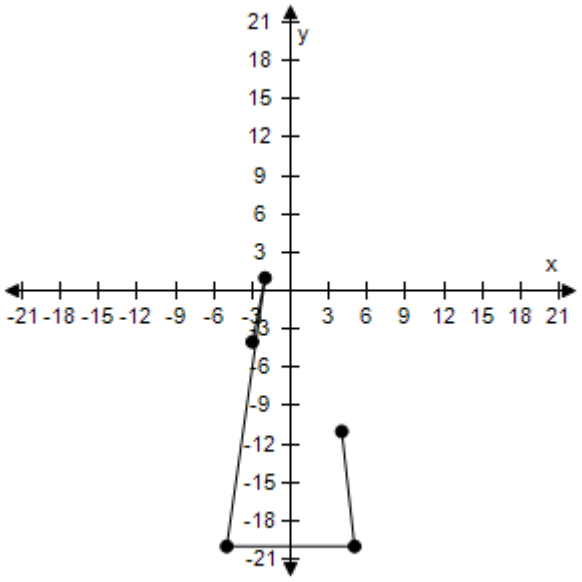
x	4	5	–5	–2	–3
y	–11	–20	–20	1	–4
(x,y)	(4, –11)	(–20,5)	(–20, –5)	(–2, 1)	(–3, –4)

Section 1.2 - Graphs of Equations



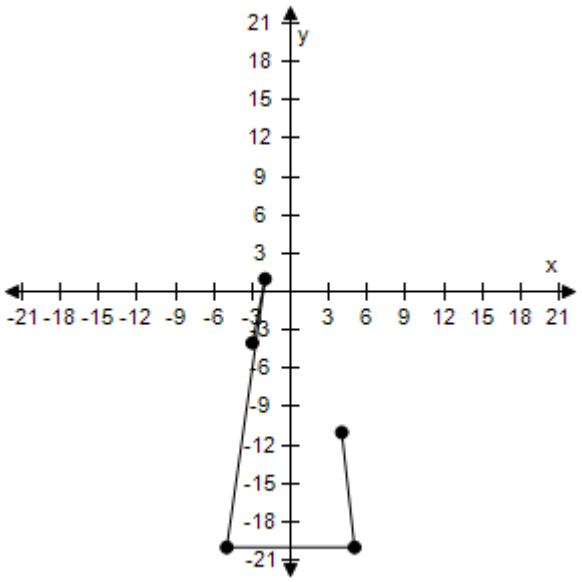
b.

x	4	5	–5	–2	–3
y	–11	–20	–20	1	–4
(x,y)	(4, –11)	(5, –20)	(–5, –20)	(–2, 1)	(–3, –4)



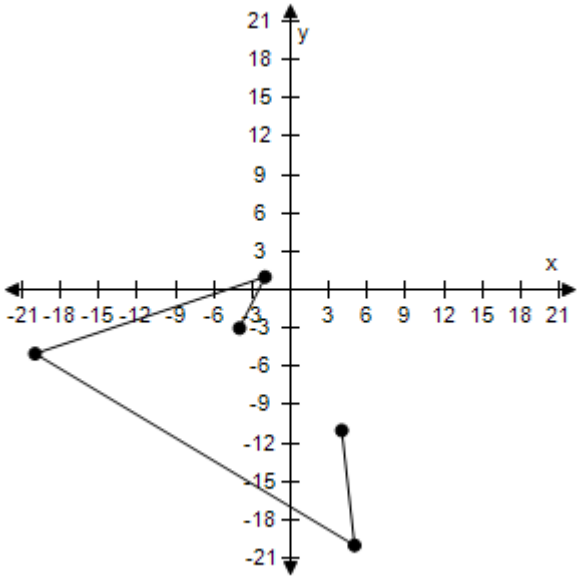
c.

x	4	5	–5	–2	–3
y	–11	–20	–20	1	–4
(x,y)	(4, –11)	(5, –20)	(–5, –20)	(–2, 1)	(–3, –4)



d.

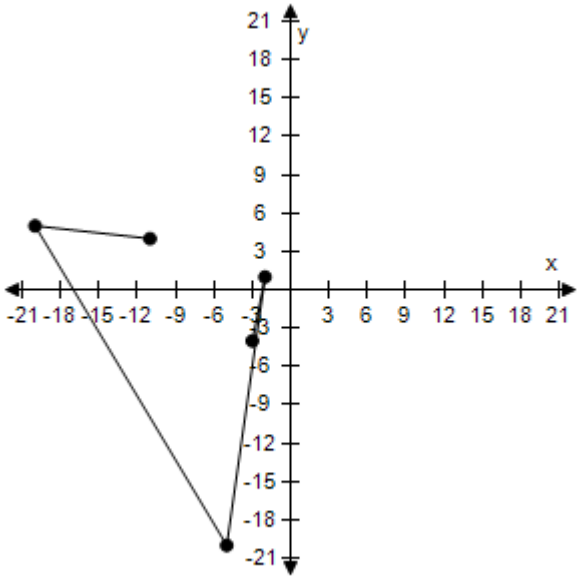
x	4	5	–5	–2	–3
y	–11	–20	–20	1	–4
(x,y)	(4, –11)	(5, –20)	(–20, –5)	(–2, 1)	(–4, –3)



e.

x	4	5	–5	–2	–3
y	–11	–20	–20	1	–4
(x,y)	(–11, 4)	(–20, 5)	(–5, –20)	(–2, 1)	(–3, –4)

Section 1.2 - Graphs of Equations

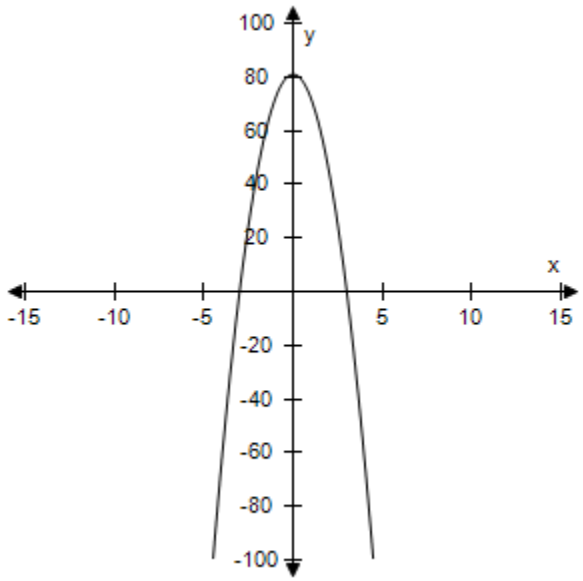


ANSWER: b
POINTS: 1
REFERENCES: 1.1.18
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/18/2014 8:11 AM

27. Graphically estimate the x- and y-intercepts of the graph.

$y = 81 - 9x^2$

Section 1.2 - Graphs of Equations



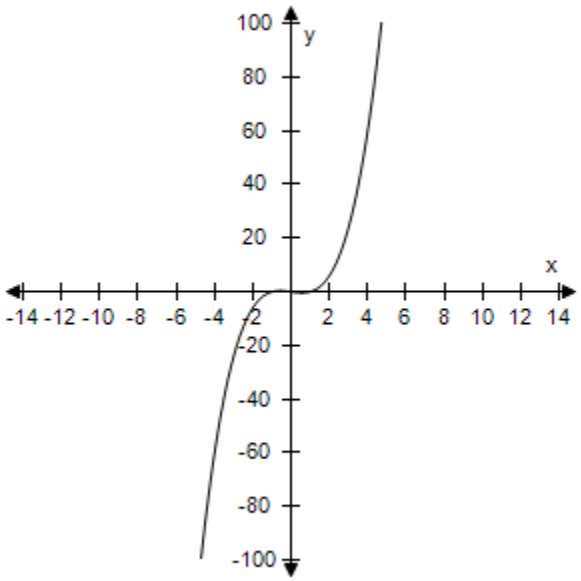
a. x-intercept: $(\pm 3, 0)$
   y-intercept: $(0, 81)$
b. x-intercept: $(3, 0)$
   y-intercept: $(0, 81)$
c. x-intercept: $(-3, 0)$
   y-intercept: $(0, 81)$
d. x-intercept: $(\pm 3, 0)$
   y-intercept: $(0, 9)$
e. x-intercept: $(0, 3)$
   y-intercept: $(0, 81)$

ANSWER: a
POINTS: 1
REFERENCES: 1.1.20
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/19/2014 1:08 AM

28. Graphically estimate the x- and y-intercepts of the graph.

$y = x^3 - x$

Section 1.2 - Graphs of Equations



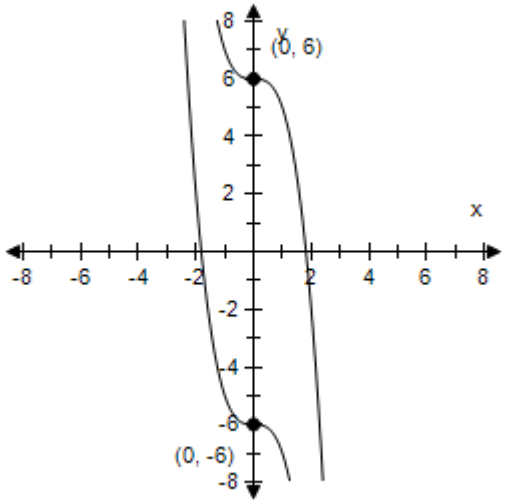
a. x-intercept: $(\pm 1, 0), (0, 0)$
   y-intercept: $(0, 0)$
b. x-intercept: $(1, 0), (0, 0)$
   y-intercept: $(0, 0)$
c. x-intercept: $(-1, 0), (0, 0)$
   y-intercept: $(0, 0)$
d. x-intercept: $(0, \pm 1), (0, 0)$
   y-intercept: $(0, 0)$
e. x-intercept: $(0, 1), (0, 0)$
   y-intercept: $(0, 0)$

ANSWER: a
POINTS: 1
REFERENCES: 1.1.24
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/19/2014 1:14 AM

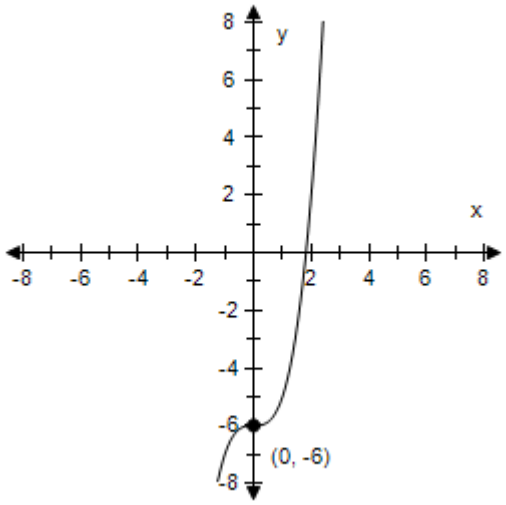
29. Identify any intercepts and test for symmetry. Then sketch the graph of the equation.

$y = x^3 - 6$

a. x- intercept: $(\sqrt[3]{6}, 0)$
   y- intercept: $(0, \pm 6)$
   No symmetry

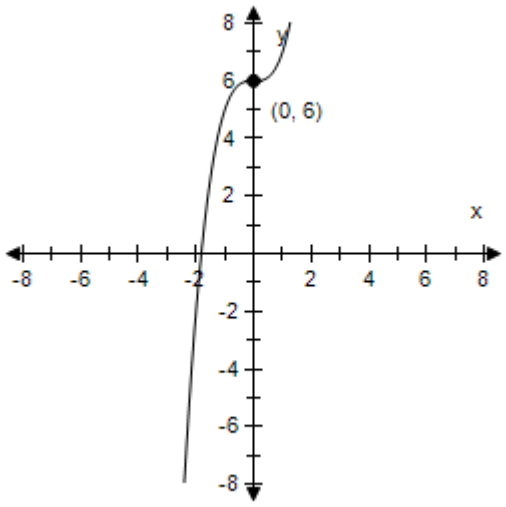


b. x- intercept: $(\sqrt[3]{6}, 0)$
y- intercept: (0, -6)
No symmetry

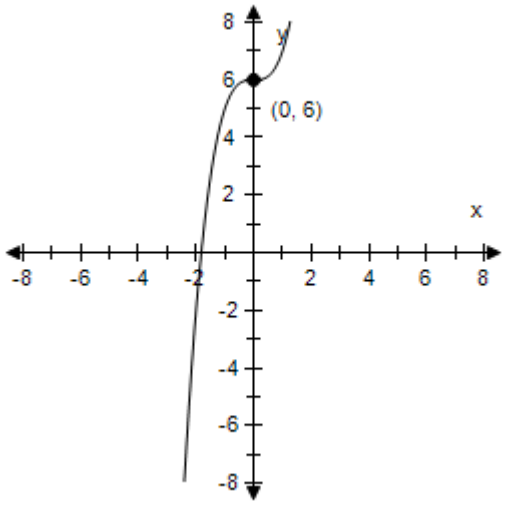


c. x- intercept: $(\sqrt[3]{6}, 0)$
y- intercept: (0, 6)
No symmetry

Section 1.2 - Graphs of Equations

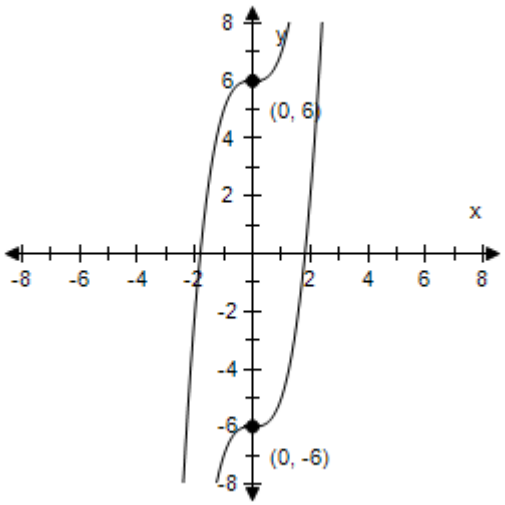


d. x- intercept: $(\sqrt[3]{-6}, 0)$
y- intercept: $(0, 6)$
No symmetry



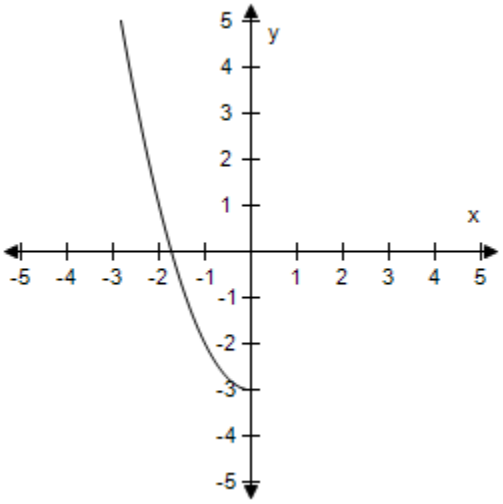
e. x- intercept: $(\sqrt[3]{-6}, 0)$
y- intercept: $(0, \pm 6)$
No symmetry

Section 1.2 - Graphs of Equations



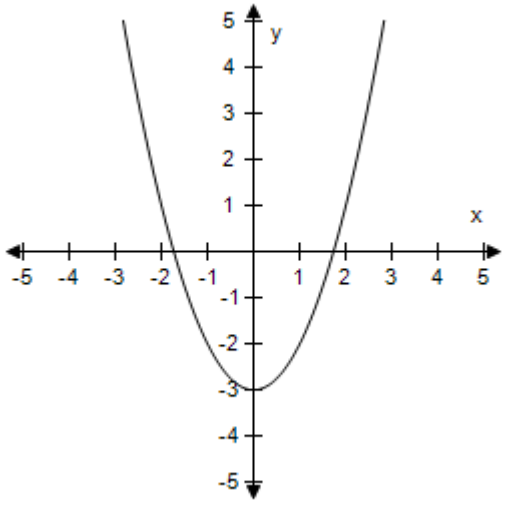
ANSWER: b
POINTS: 1
REFERENCES: 1.1.42
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/19/2014 1:31 AM

30. Assume that the graph has *y*-symmetry. Select the complete graph of the equation.

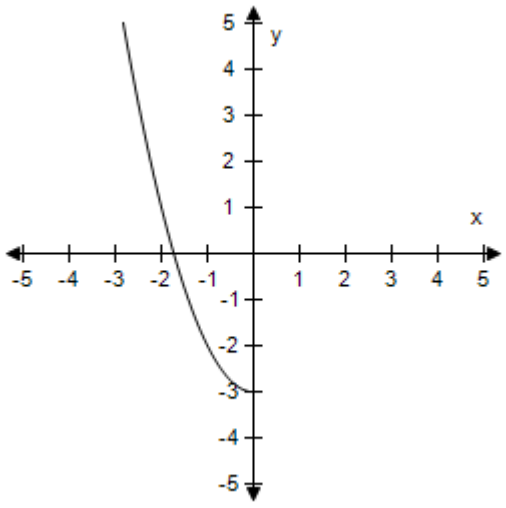


a.

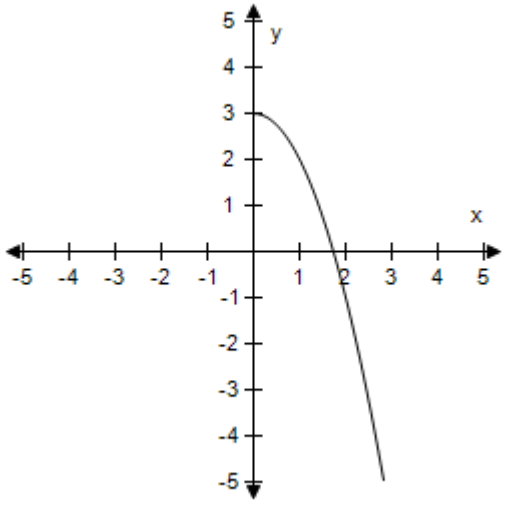
Section 1.2 - Graphs of Equations



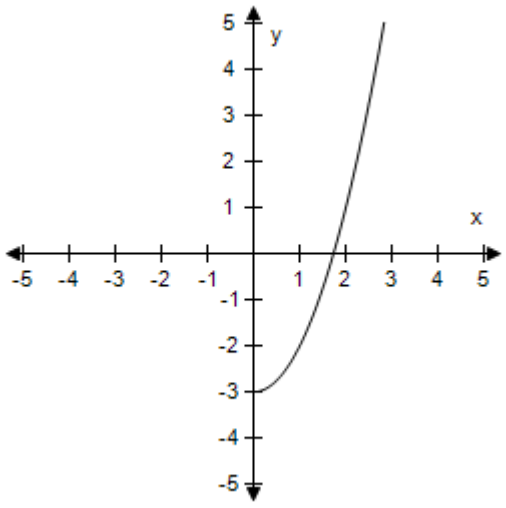
b.



c.

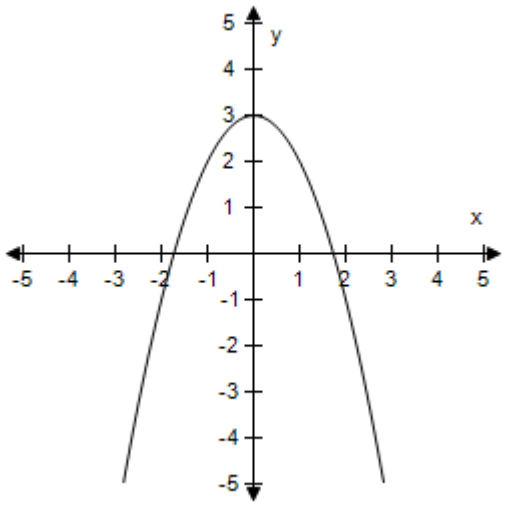


d.



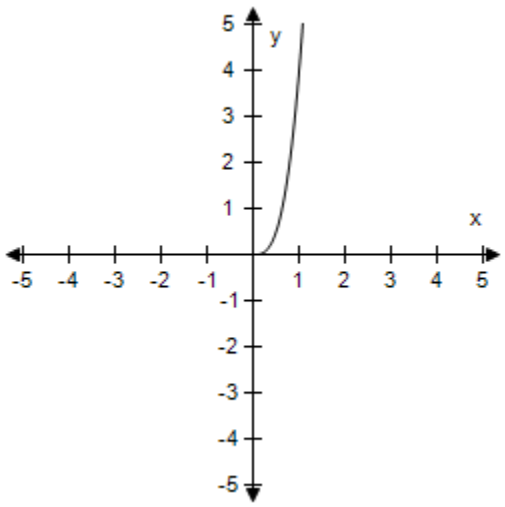
e.

Section 1.2 - Graphs of Equations



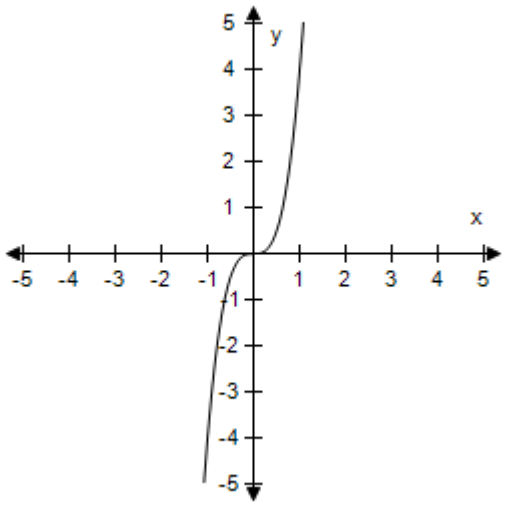
ANSWER: a
POINTS: 1
REFERENCES: 1.1.33
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/19/2014 1:41 AM

31. Assume that the graph has Origin symmetry. Select the complete graph of the equation.

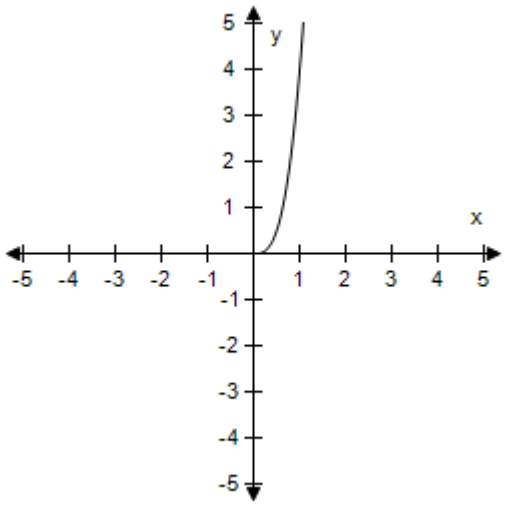


a.

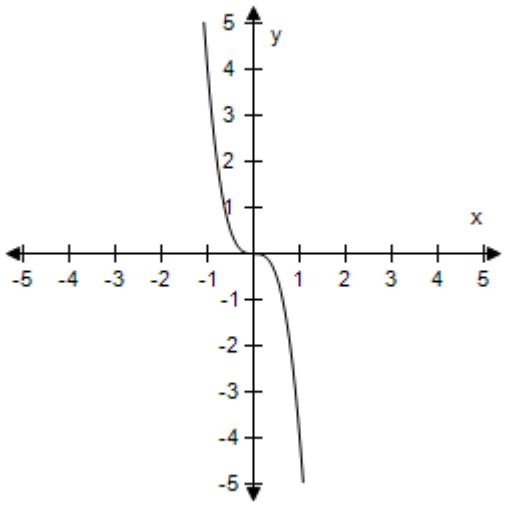
b.



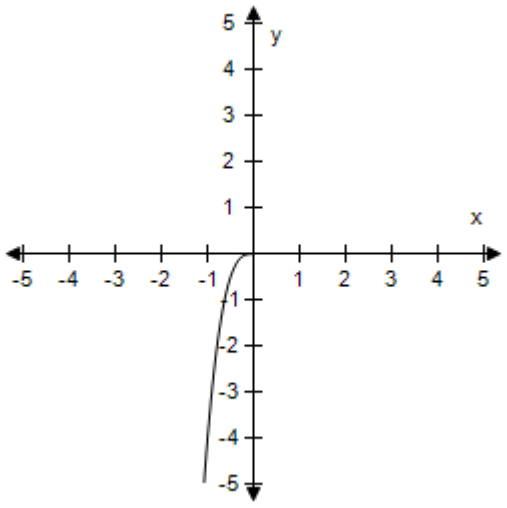
c.



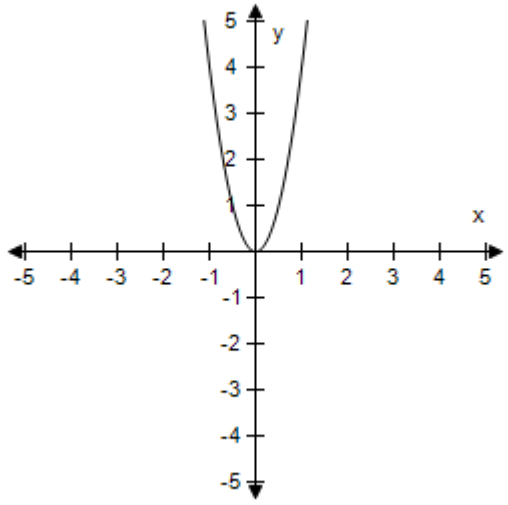
d.



e.



Section 1.2 - Graphs of Equations

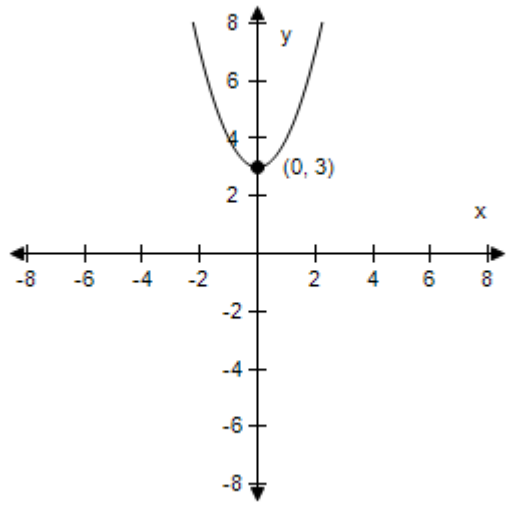


ANSWER: a
POINTS: 1
REFERENCES: 1.1.35
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/19/2014 2:08 AM

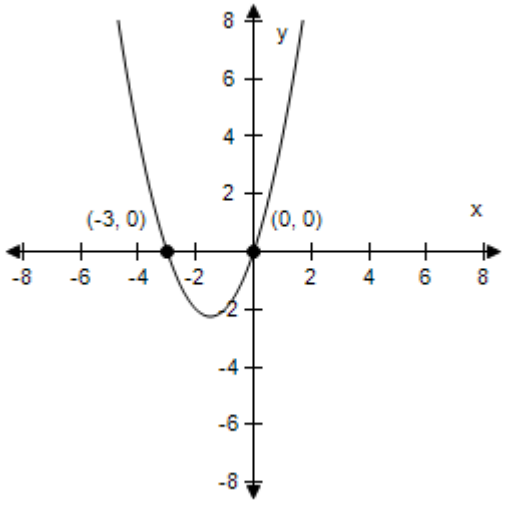
32. Identify any intercepts and test for symmetry. Then sketch the graph of the equation.

$y = x^2 + 3$

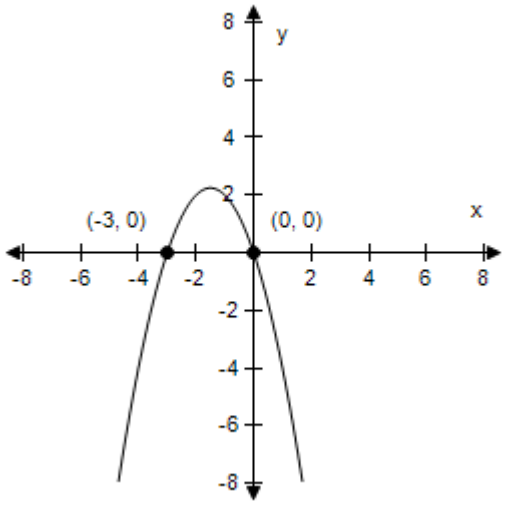
a. x-intercept : none
y-intercept : (0, 3)
The graph has y-symmetry.



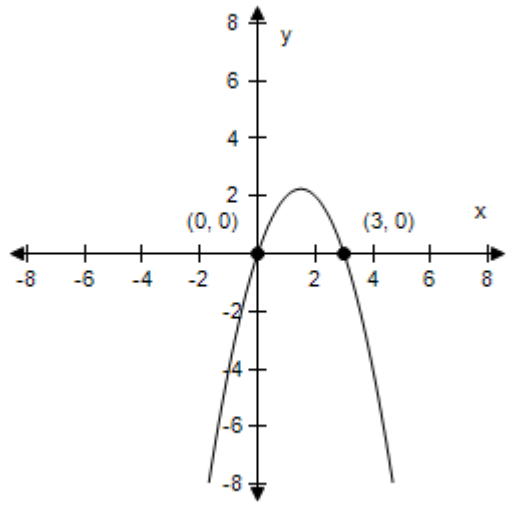
b. x-intercept : (0, 0), (-3, 0)
y-intercept : (0, 0)
No symmetry



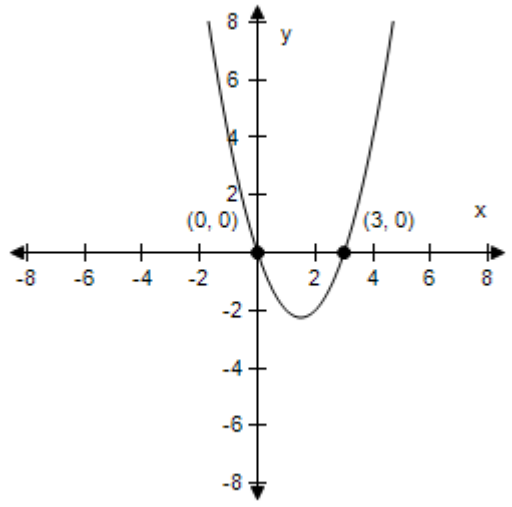
c. x-intercept : (0, 0), (-3, 0)
y-intercept : (0, 0)
No symmetry



d. x-intercept : (0, 0), (3, 0)
y-intercept : (0, 0)
No symmetry



e. x-intercept : (0, 0), (3, 0)
y-intercept : (0, 0)
No symmetry



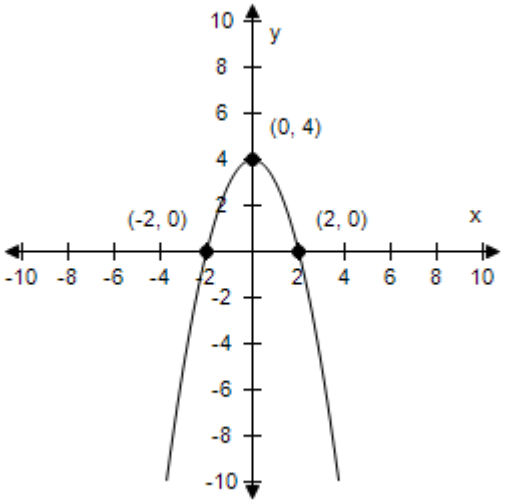
ANSWER: a
POINTS: 1
REFERENCES: 1.1.41
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/9/2015 6:13 AM

33. Use a graphing utility to graph the equation. Use a standard setting. Approximate any intercepts.

$y = x^2 - 4$

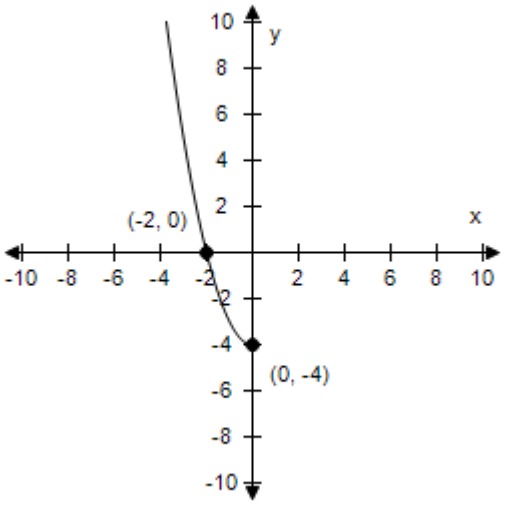
Section 1.2 - Graphs of Equations

a.



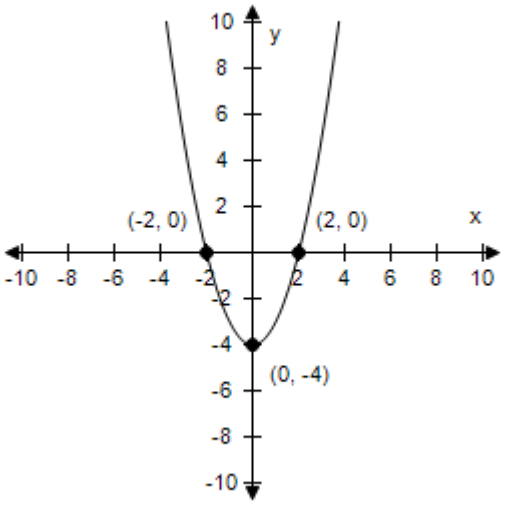
Intercepts: (-2, 0), (2, 0), (0, 4)

b.



Intercepts: (-2, 0), (0, -4)

c.

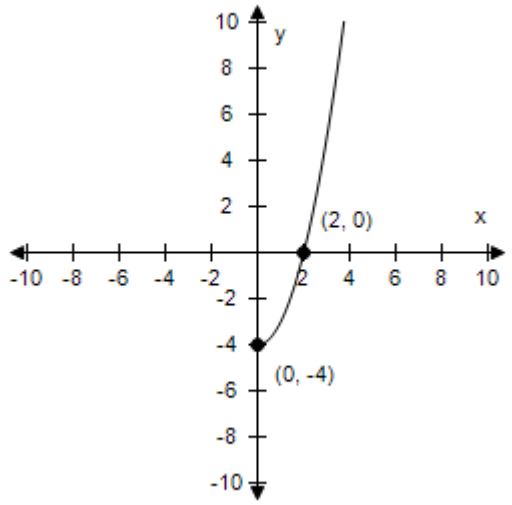


Intercepts: (-2, 0), (2, 0), (0, -

Section 1.2 - Graphs of Equations

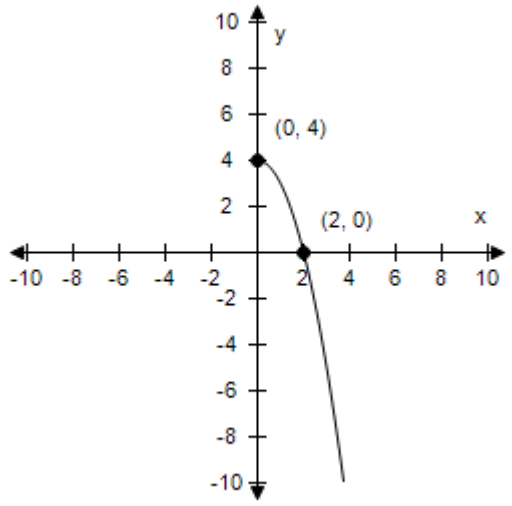
4)

d.



Intercepts: (2, 0), (0, -4)

e.



Intercepts: (2, 0), (0, 4)

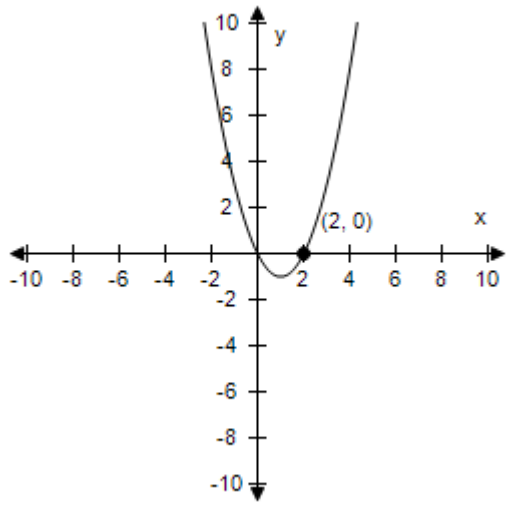
ANSWER: c
POINTS: 1
REFERENCES: 1.1.51
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/19/2014 2:47 AM

34. Use a graphing utility to graph the equation. Use a standard setting. Approximate any intercepts.

$y = x^2 - 2x$

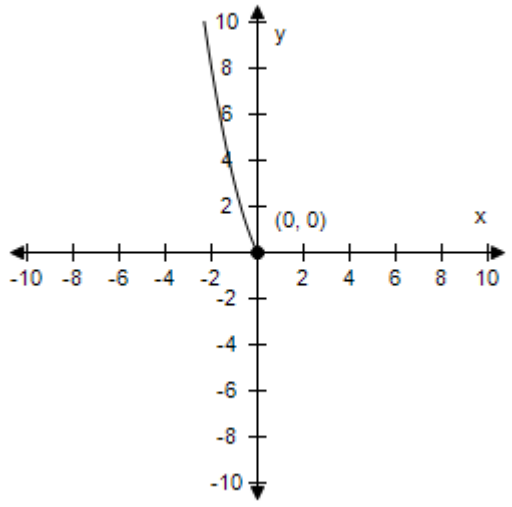
a.

Section 1.2 - Graphs of Equations



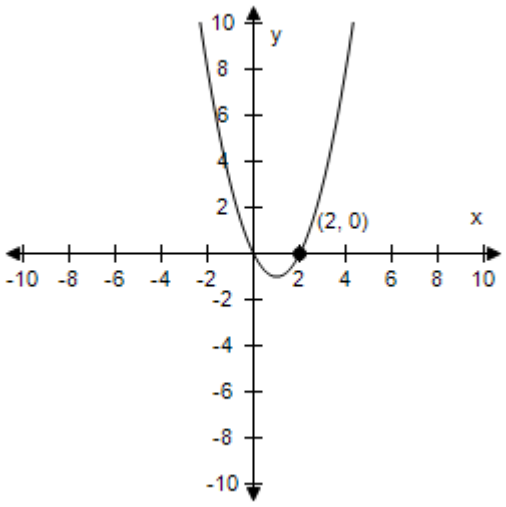
Intercepts: (0, 0), (-2, 0)

b.



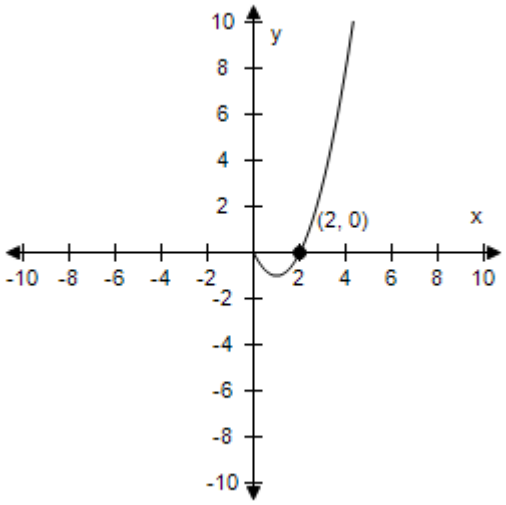
Intercepts: (0, 0)

c.



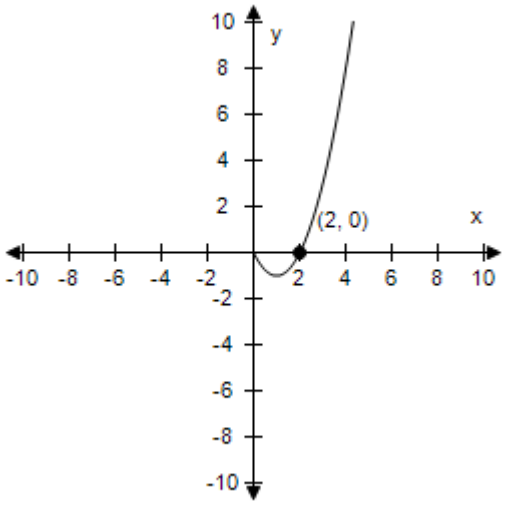
Intercepts: (0, 0), (2, 0)

d.



Intercepts: (2, 0), (0, 0)

e.



Intercepts: (-2, 0), (0,

0)

ANSWER: c
POINTS: 1
REFERENCES: 1.1.52
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/9/2015 6:21 AM

35. Determine which point lies on the graph of the equation $9x^2 + 4x - 10$.

a. (0, -10)
b. (1, -10)
c. (0, -12)
d. (2, -11)
e. (1, -12)

ANSWER: a
POINTS: 1
REFERENCES: 1.1.9a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/19/2014 3:07 AM

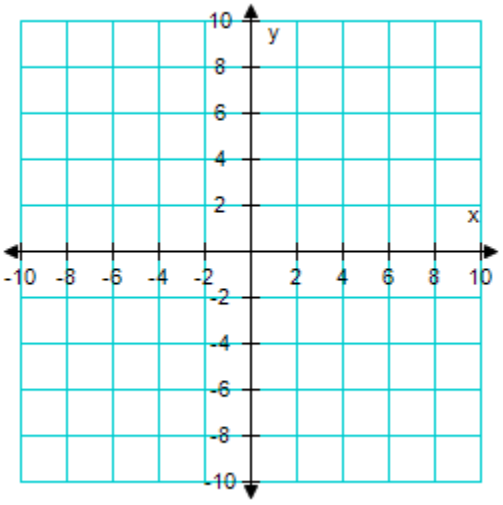
36. Determine which point does **not** lie on the graph of the equation $y = -8 - |x - 5|$.

a. (-2, -15)
b. (-4, -17)
c. (7, -10)
d. (4, -6)
e. (0, -13)

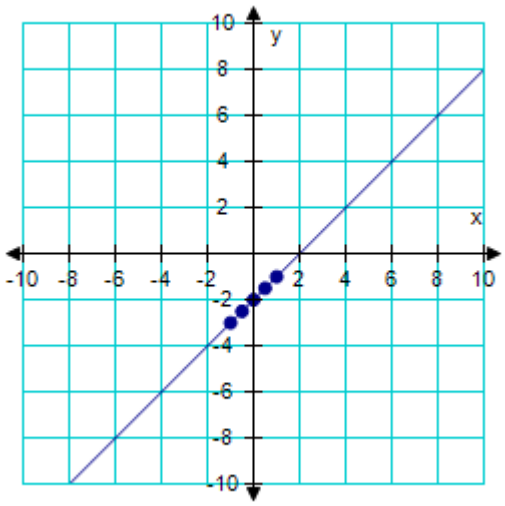
ANSWER: d
POINTS: 1
REFERENCES: 1.1.10a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/19/2014 3:10 AM

37. Create and complete a table to find the x and y coordinates of points that lie on the graph of the equation below. Plot at least 5 points along with the graph of the equation.
$y = x + 2$

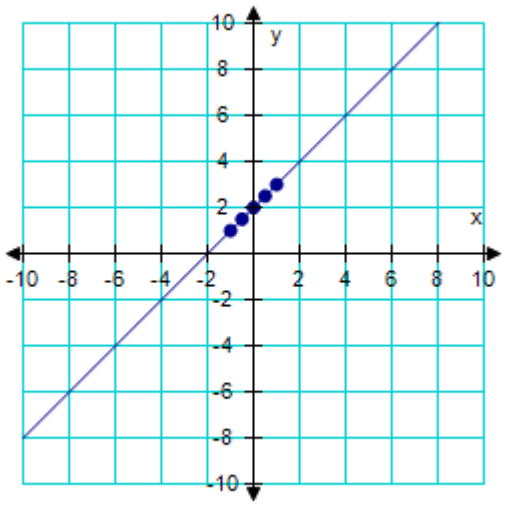
Section 1.2 - Graphs of Equations



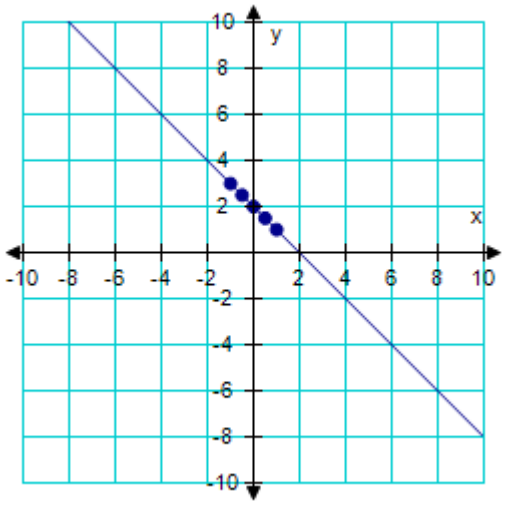
a.



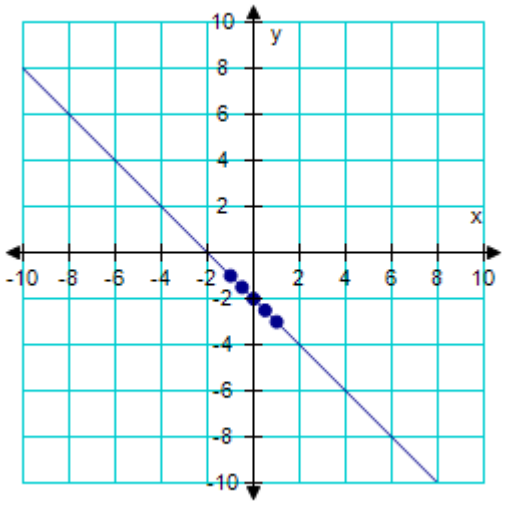
b.



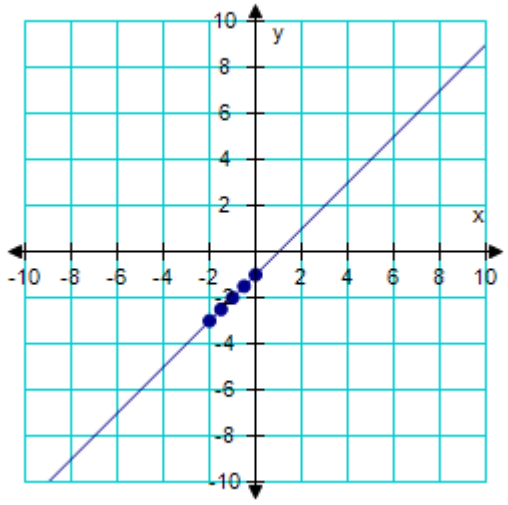
c.



d.



e.



ANSWER: b
POINTS: 1
REFERENCES: 1.1.15
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/20/2014 1:33 AM

38. Find the x- and y-intercepts of the graph of the equation $y = |13x - 7|$.

a. x-intercept: $\left(-\frac{7}{13}, 0\right)$
y-intercept: (0, 13)

b. x-intercept: $\left(-\frac{13}{7}, 0\right)$
y-intercept: (0, –7)

c. x-intercept: (–7, 0)
y-intercept: (0, 13)

d. x-intercept: $\left(-\frac{13}{7}, 0\right)$
y-intercept: none

e. x-intercept: $\left(\frac{7}{13}, 0\right)$
y-intercept: (0, 7)

ANSWER: e
POINTS: 1
REFERENCES: 1.1.21
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True

Section 1.2 - Graphs of Equations

DATE CREATED: 11/20/2014 2:07 AM
DATE MODIFIED: 11/20/2014 3:05 AM

39. Find the *x*- and *y*-intercepts of the graph of the equation $y^2 = 8x + 5$.

a. *x*-intercept: $\left(\frac{5}{8}, 0\right)$
y-intercept: $(0, -\sqrt{5})$

b. *x*-intercept: $\left(\frac{5}{8}, 0\right)$
y-intercept: $(0, \pm\sqrt{5})$

c. *x*-intercept: $\left(0, \frac{5}{8}\right)$
y-intercept: $(0, \pm\sqrt{5})$

d. *x*-intercept: $\left(\frac{5}{8}, 0\right)$
y-intercept: $(0, \sqrt{5})$

e. *x*-intercept: $\left(\frac{5}{8}, 0\right)$
y-intercept: $(0, \sqrt{5})$

ANSWER: b
POINTS: 1
REFERENCES: 1.1.22
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 11/20/2014 2:42 AM
DATE MODIFIED: 5/9/2015 6:28 AM

40. Use algebraic tests to check the following for symmetry with respect to the axes and the origin.
$3x + 2y^6 = 0$

a. Symmetric with respect to the origin.
b. No symmetry.
c. Symmetric with respect to the *y*-axis.
d. Symmetric with respect to the *x*-axis.

ANSWER: d
POINTS: 1
REFERENCES: 1.1.26
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True

Section 1.2 - Graphs of Equations

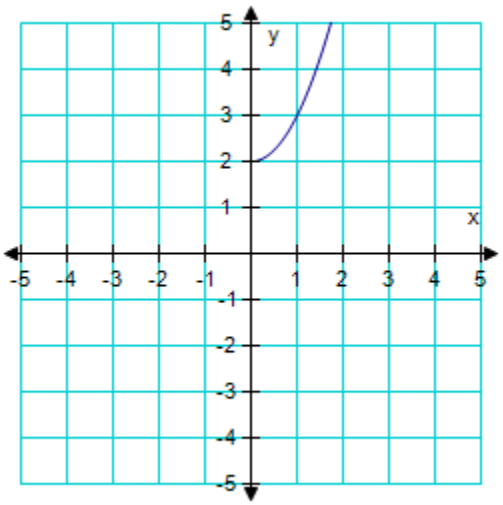
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/20/2014 3:10 AM

41. Use algebraic tests to check the following for symmetry with respect to the axes and the origin.
$y = 4x^{20} - x^{10} - 3$

a. No symmetry.
b. Symmetric with respect to the *y*-axis.
c. Symmetric with respect to the origin.
d. Symmetric with respect to the *x*-axis.

ANSWER: b
POINTS: 1
REFERENCES: 1.1.28
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/20/2014 3:12 AM

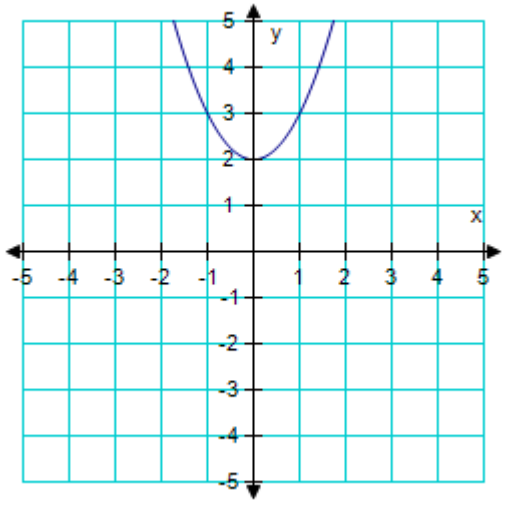
42. Assume the graph has the indicated type of symmetry. Sketch the complete graph.



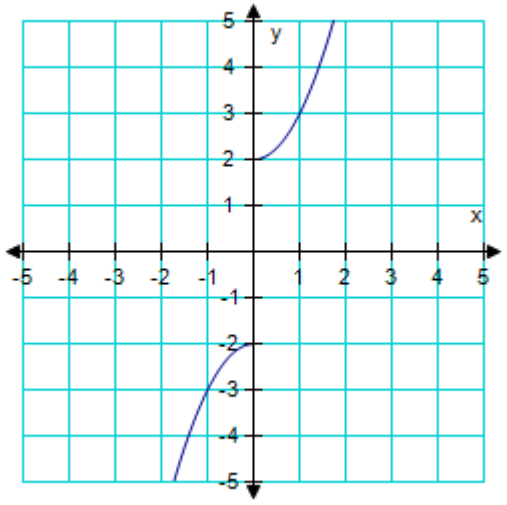
symmetric with respect to the *origin.*

Section 1.2 - Graphs of Equations

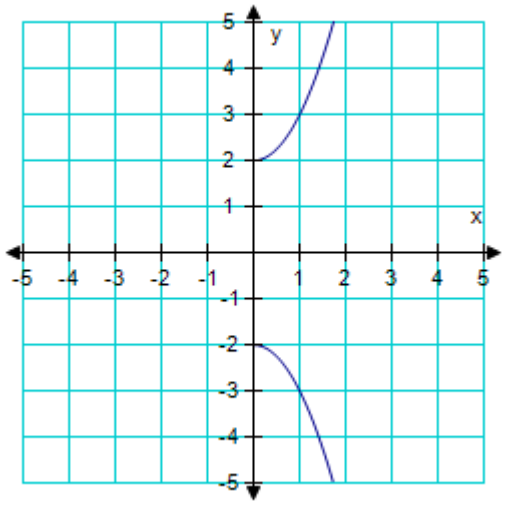
a.



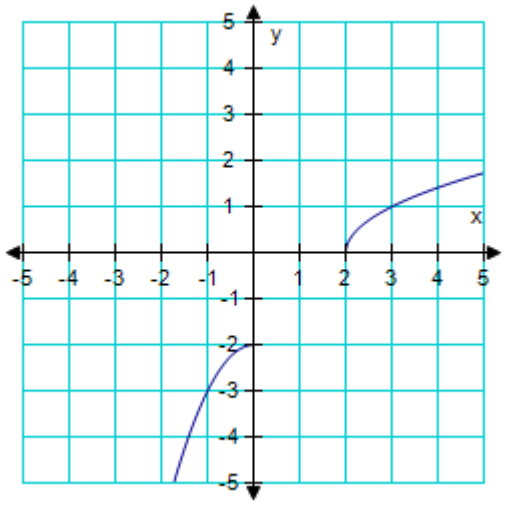
b.



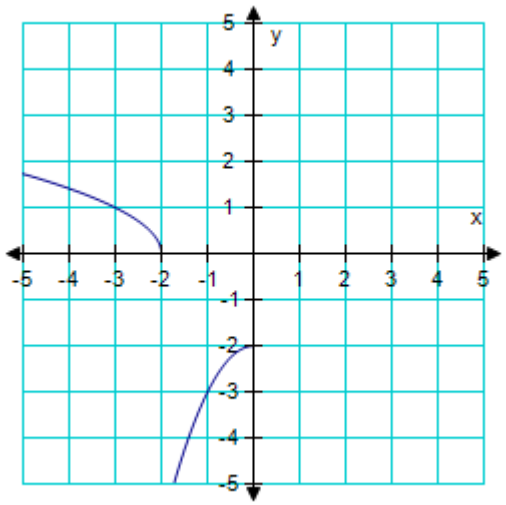
c.



d.



e.



ANSWER: b

Section 1.2 - Graphs of Equations

POINTS: 1
REFERENCES: 1.1.35
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/20/2014 3:48 AM

43. Find the x- and y-intercepts of the graph of the equation $y = 36 - 6x$.

a. x-intercept: (6, 0)
y-intercept: (0, -6)
b. x-intercept: (36, 0)
y-intercept: (0, 6)
c. x-intercept: (-6, 0)
y-intercept: (0, -36)
d. x-intercept: (36, 0)
y-intercept: (0, 36)
e. x-intercept: (6, 0)
y-intercept: (0, 36)

ANSWER: e
POINTS: 1
REFERENCES: 1.1.22
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/20/2014 3:50 AM

44. Find the x- and y-intercepts of the graph of the equation $y = \sqrt{-8x - 7}$.

a. x-intercept: $\left(-\frac{8}{7}, 0\right)$
y-intercept: none
b. x-intercept: $\left(-\frac{7}{8}, 0\right)$
y-intercept: $(0, -7)$
c. x-intercept: $(7, 0)$
y-intercept: none
d. x-intercept: $(-8, 0)$
y-intercept: $(0, 7)$
e. x-intercept: $\left(-\frac{7}{8}, 0\right)$
y-intercept: none

ANSWER: e
POINTS: 1

Section 1.2 - Graphs of Equations

REFERENCES: 1.1.19
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 11/20/2014 6:18 AM
DATE MODIFIED: 5/11/2015 5:16 AM

45. Write the standard form of the equation of the circle with the given characteristics.
center: (–1, –5); radius: 6

a. $(x-1)^2+(y-5)^2=36$

b. $(x+5)^2+(y+1)^2=6$

c. $(x+5)^2+(y+1)^2=36$

d. $(x-5)^2+(y-1)^2=6$

e. $(x+1)^2+(y+5)^2=36$

ANSWER: e
POINTS: 1
REFERENCES: 1.1.63
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/20/2014 6:58 AM

46. Write the standard form of the equation of the circle with the given characteristics.
center: (–5, –4); solution point: (–3, –7)

a. $(x+5)^2+(y+4)^2=13$

b. $(x-5)^2+(y+4)^2=1$

c. $(x-5)^2+(y-4)^2=13$

d. $(x-5)^2+(y-4)^2=17$

e. $(x+5)^2+(y-4)^2=17$

ANSWER: a
POINTS: 1
REFERENCES: 1.1.65
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/20/2014 7:09 AM

47. Write the standard form of the equation of the circle with the given characteristics.
endpoints of a diameter: (3, 4), (7, 8)

Section 1.2 - Graphs of Equations

a. $(x-5)^2+(y-6)^2=8$

b. $(x-6)^2+(y-5)^2=8$

c. $(x+5)^2+(y+6)^2=8$

d. $(x+5)^2+(y-6)^2=340$

e. $(x-5)^2+(y+6)^2=340$

ANSWER: a
POINTS: 1
REFERENCES: 1.1.68
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/20/2014 7:50 AM

48. Find the center and radius of the circle $x^2+y^2=49$.

a. center: (0, 0), radius: 11
b. center: (-1, 1), radius: 11
c. center: (0, 0), radius: 7
d. center: (-1, -1), radius: 7
e. center: (–7, –11), radius: 7

ANSWER: c
POINTS: 1
REFERENCES: 1.1.69
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/21/2014 2:03 AM

49. Find the center and radius of the circle $(x-5)^2+(y-1)^2=25$.

a. center: (1, 5), radius 5
b. center: (5, 1), radius 25
c. center: (–5, –1), radius 5
d. center: (–5, –1), radius 25
e. center: (5, 1), radius 5

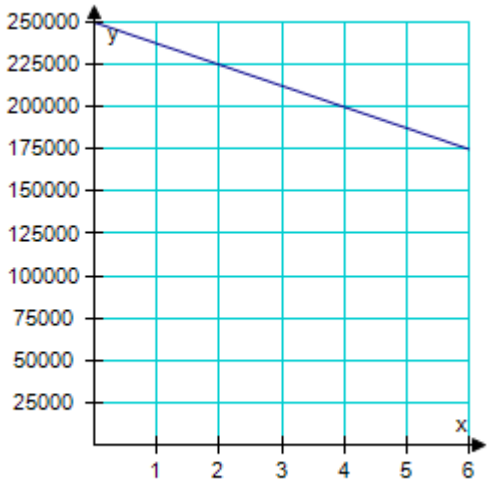
ANSWER: e
POINTS: 1
REFERENCES: 1.1.71
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM

Section 1.2 - Graphs of Equations

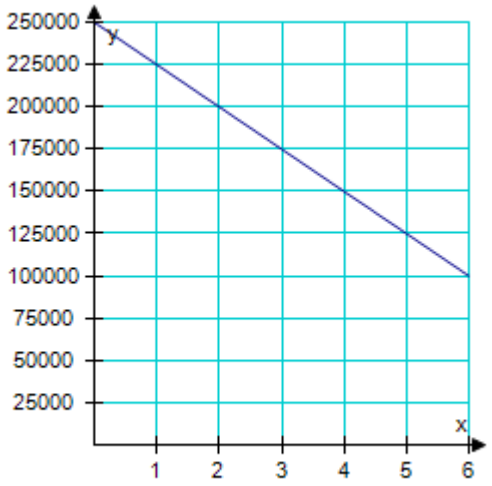
DATE MODIFIED: 11/21/2014 2:06 AM

50. You purchase a house for \$250,000. The depreciated value, y, after x years is given by $y = 250{,}000 - 12{,}500x$. Sketch the graph of the equation given $0 \le x \le 8$.

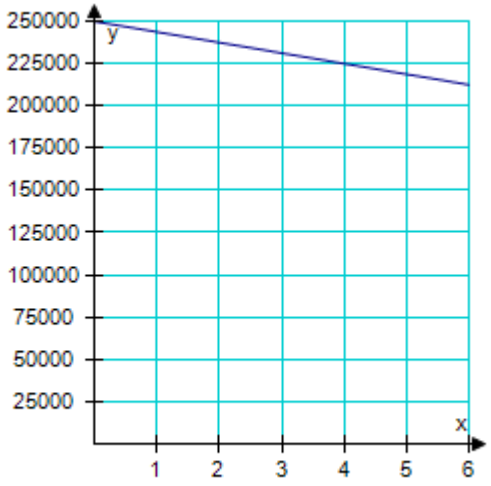
a.



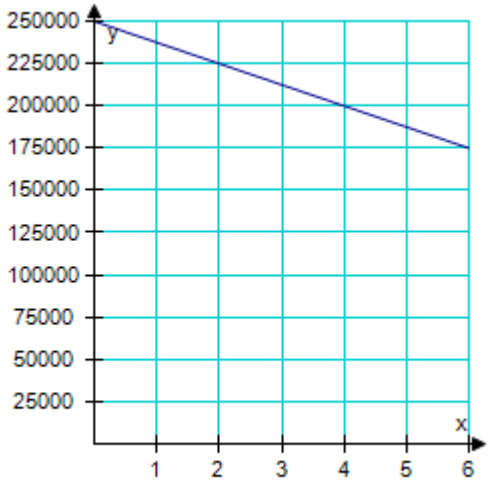
b.



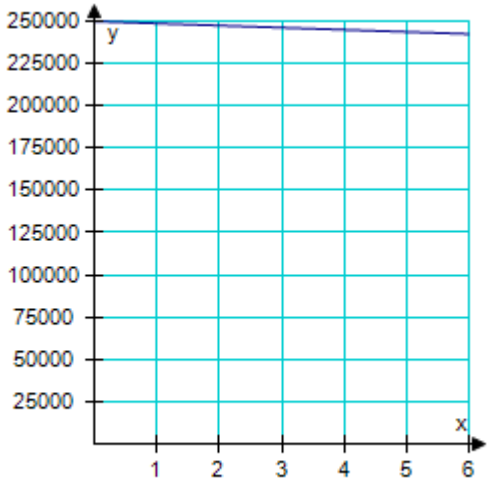
c.



d.



e.

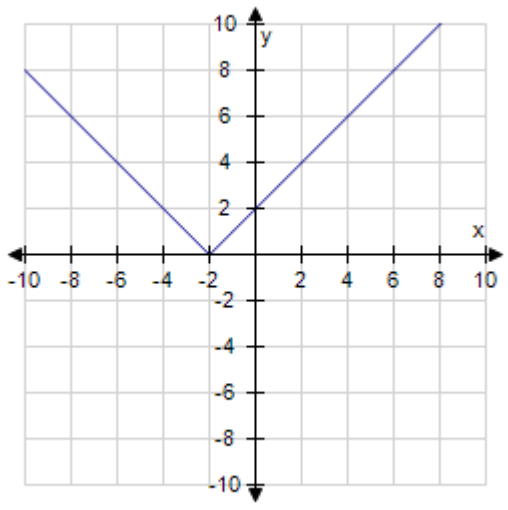


ANSWER: a
POINTS: 1
REFERENCES: 1.1.76
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/21/2014 2:26 AM

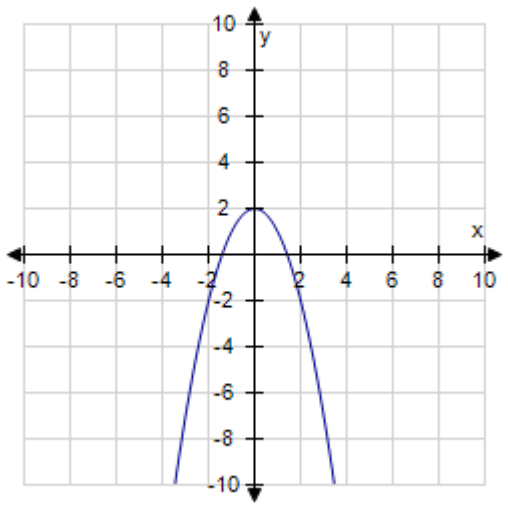
51. Find the graph of the equation.

$f(x) = |x - 2|$

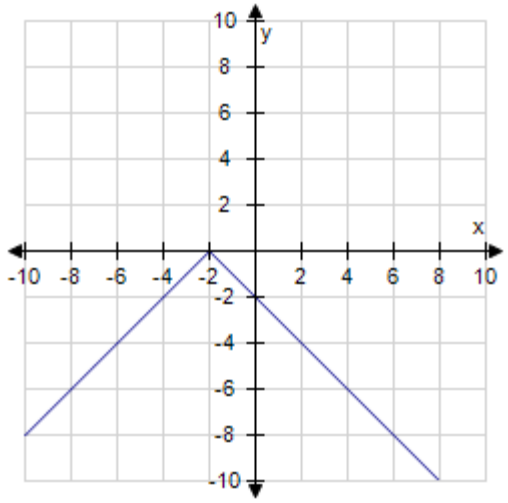
a.



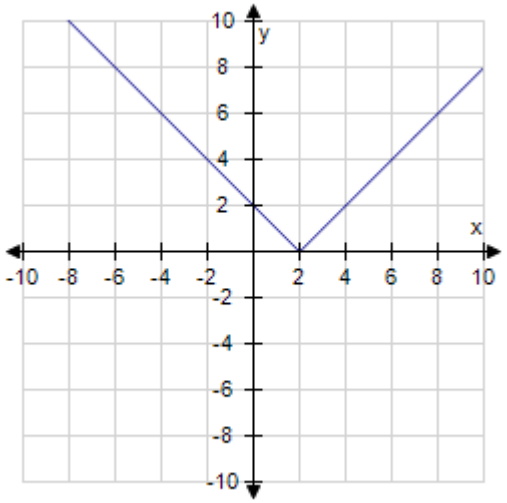
b.



c.



d.

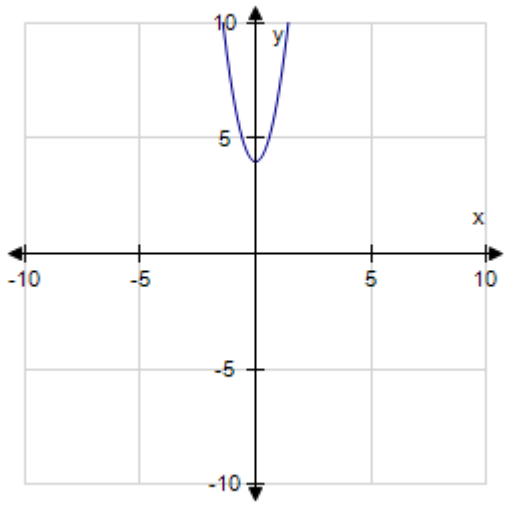


ANSWER: d
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/11/2015 5:18 AM

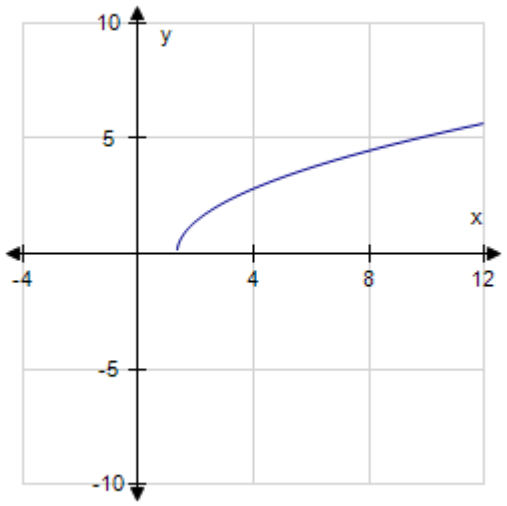
52. Find the graph of the equation.

$f(x) = \sqrt{3x - 4}$

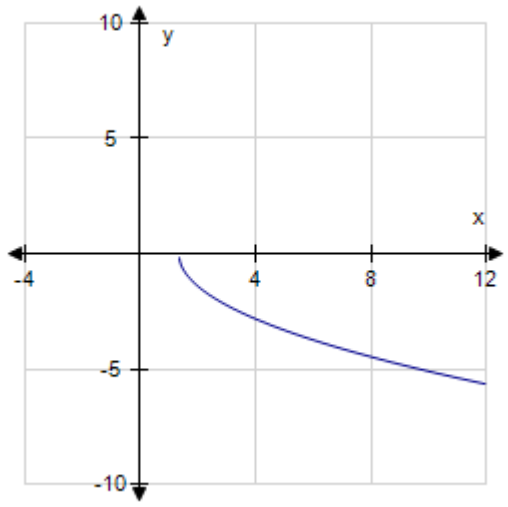
a.



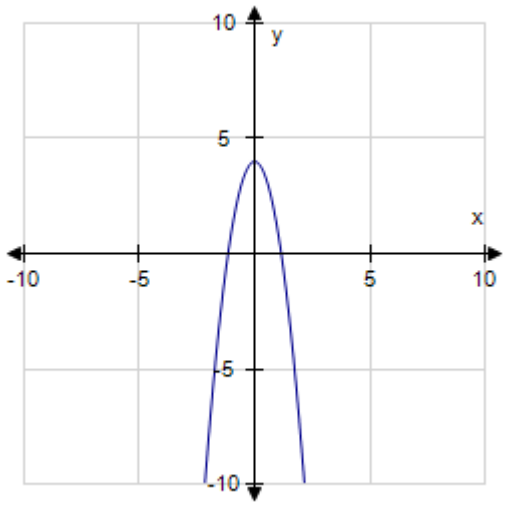
b.



c.



d.



ANSWER: b
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/11/2015 5:43 AM

53. Find the value of y that corresponds to $x = -4$ in the graph of the equation $2x + 3y = 13$.

a. 9
b. –7
c. –9
d. 21
e. 7

ANSWER: e
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/21/2014 3:02 AM

54. Find the value of x that corresponds to $y = 7$ in the graph of the equation $4x - 3y = -37$.

a. 4
b. –16
c. –3
d. 3
e. –4

ANSWER: e
POINTS: 1

Section 1.2 - Graphs of Equations

QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/21/2014 3:10 AM

55. Find the y-intercept of the graph of the equation $y = 3x + 18$.

a. (0, 3)
b. (18, 0)
c. (-6, 0)
d. (0, 18)
e. (0, -6)

ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/21/2014 3:14 AM

56. Find the x-intercept of the graph of the equation $y = 3x + 15$.

a. (0, -5)
b. (0, 15)
c. (15, 0)
d. (0, 3)
e. (-5, 0)

ANSWER: e
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/21/2014 3:16 AM

57. Find the y-intercept of the graph of the equation $4y = 3x + 12$.

a. (0, -3)
b. (-4, 0)
c. (0, 3)
d. (0, -4)
e. (0, 12)

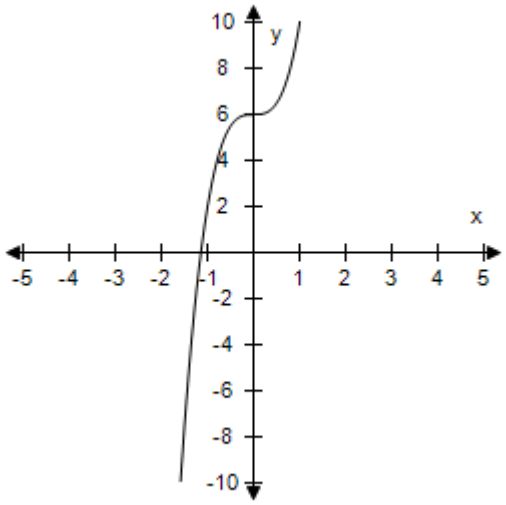
ANSWER: c
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM

Section 1.2 - Graphs of Equations

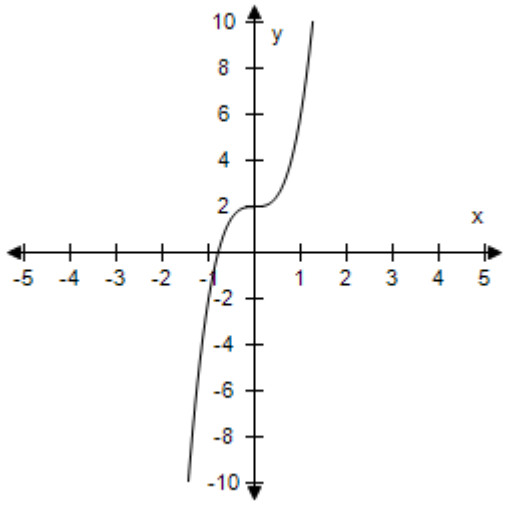
DATE MODIFIED: 11/21/2014 3:17 AM

58. Sketch the graph of the equation $4x^3+4$.

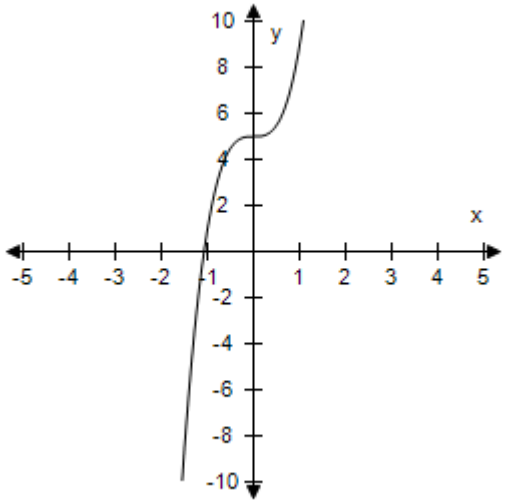
a.



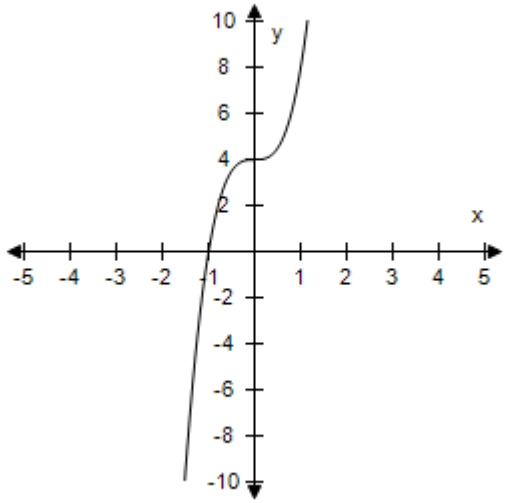
b.



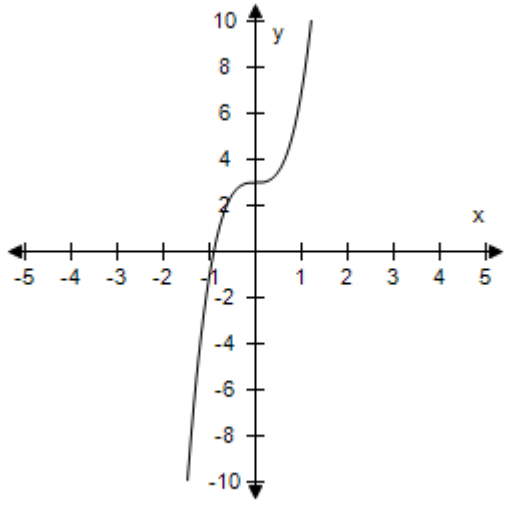
c.



d.



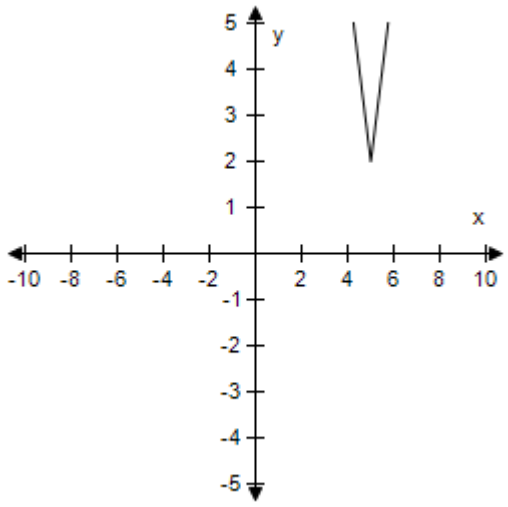
e.



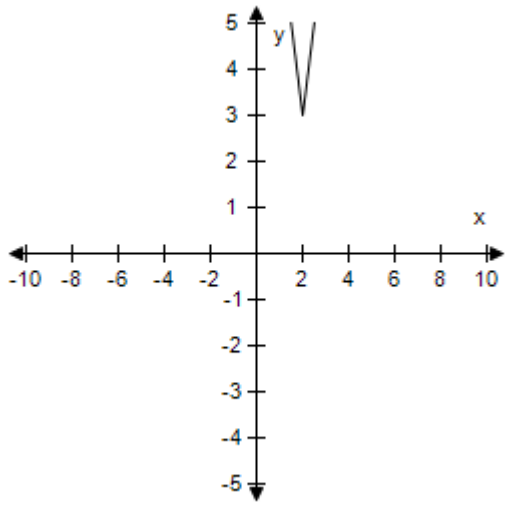
ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/11/2015 5:46 AM

59. Sketch the graph of the equation $y = 4|x - 3| + 2$.

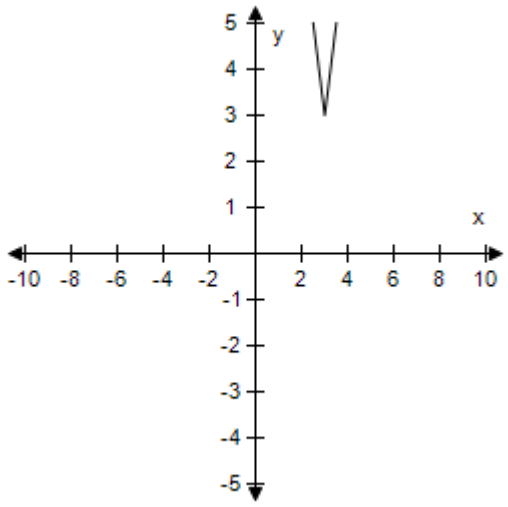
a.



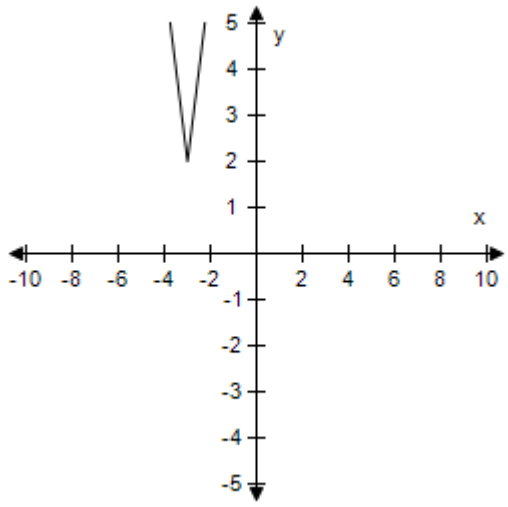
b.



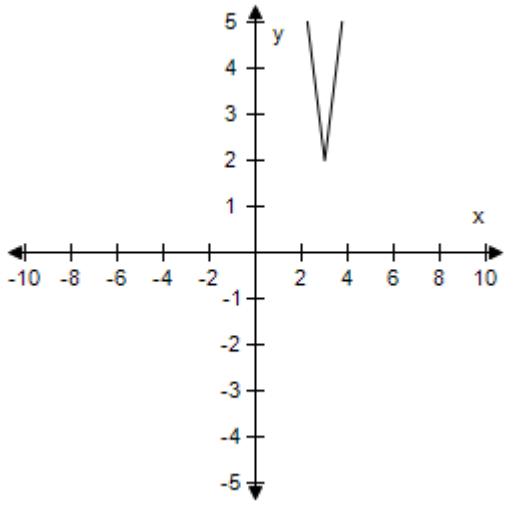
c.



d.



e.



ANSWER: e
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/21/2014 3:54 AM

60. Find the *x*-intercept of the graph of the equation $y = 3\sqrt{x-6}$.

a. (0, -6)
b. (0, 6)
c. (6, 0)
d. (-6, 0)
e. (0, -18)

ANSWER: c

Section 1.2 - Graphs of Equations

POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/21/2014 4:02 AM

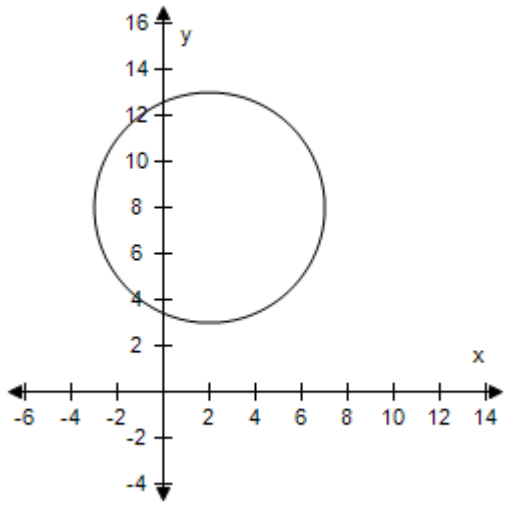
61. Find any x- or y-intercepts for the graph of the equation $y = x^2 - 8x + 12$.

a. x-intercepts: (0, 12)
y-intercepts: (2, 0), (6, 0)
b. x-intercepts: (-2, 0), (-6, 0)
y-intercepts: (0, 12)
c. x-intercepts: (2, 0), (6, 0)
y-intercepts: none
d. x-intercepts: (0, 2), (0, 6)
y-intercepts: (12, 0)
e. x-intercepts: (2, 0), (6, 0)
y-intercepts: (0, 12)

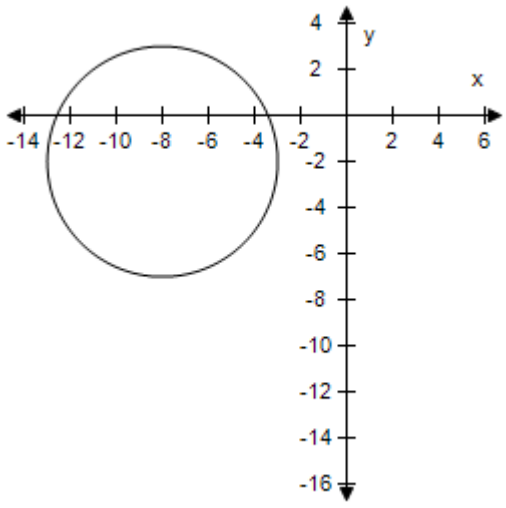
ANSWER: e
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/21/2014 4:05 AM

62. Graph the circle $(x-2)^2 + (y-8)^2 = 25$.

a.



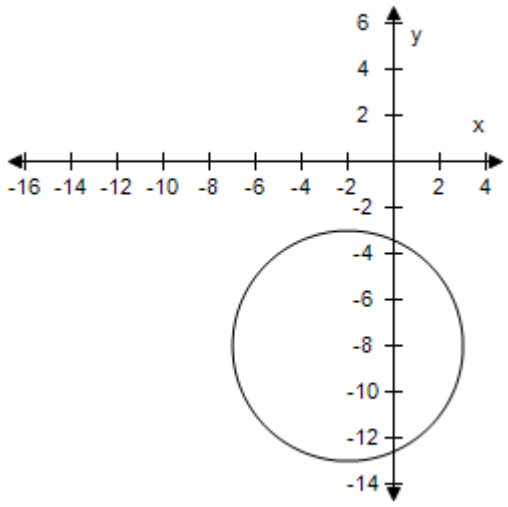
b.

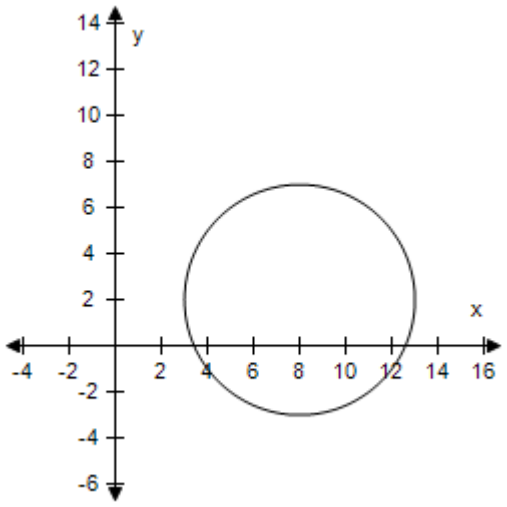


c.

d.

Section 1.2 - Graphs of Equations



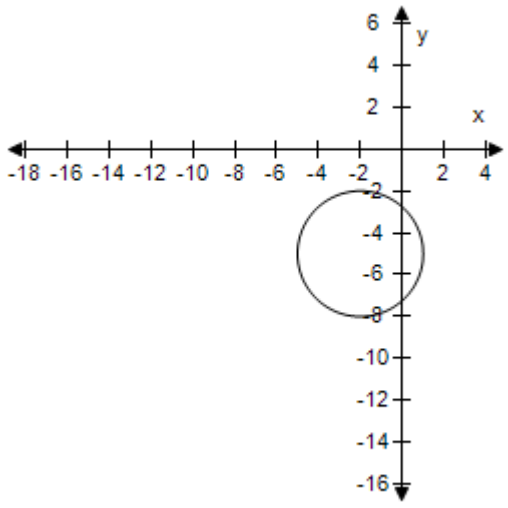


e. None of the above.

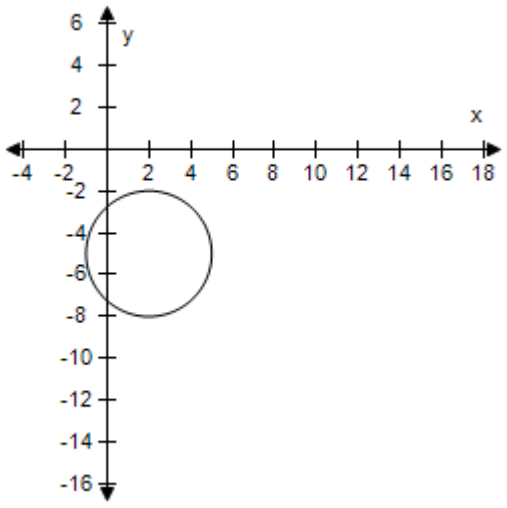
ANSWER: a
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/21/2014 4:21 AM

63. Graph the circle $(x+2)^2+(y-5)^2=9$.

a.

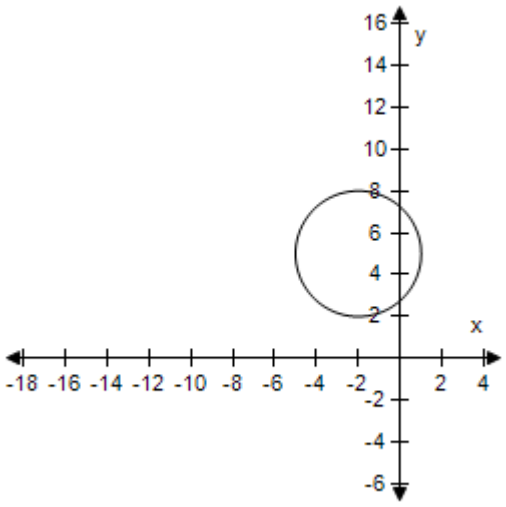


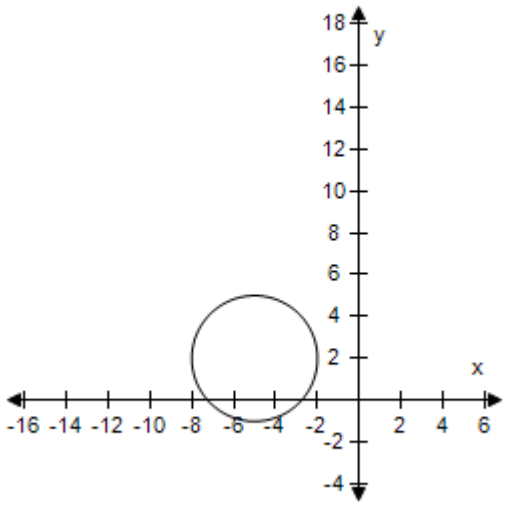
b.



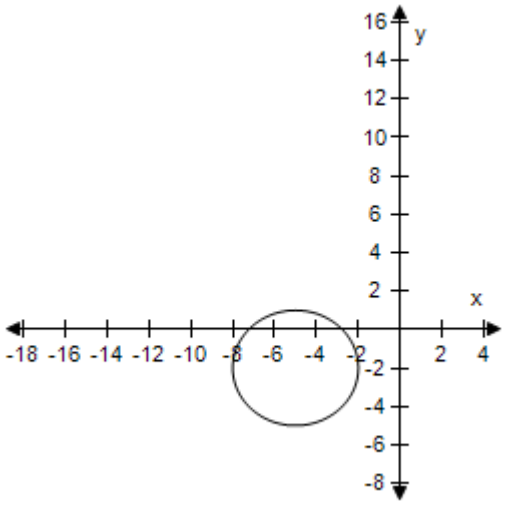
c.

d.





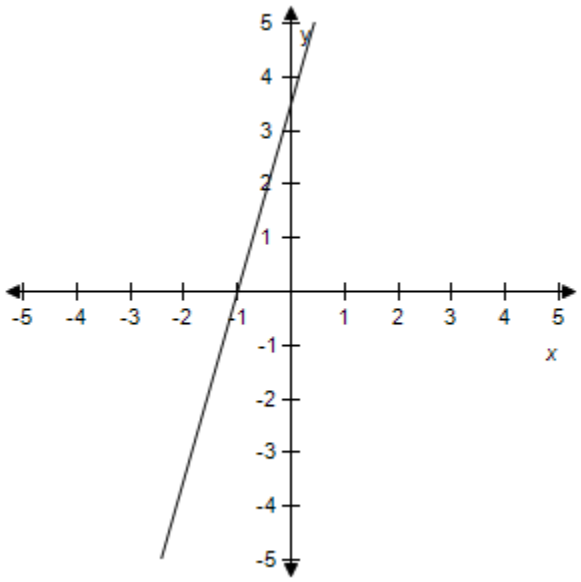
e.



ANSWER: c
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/11/2015 5:50 AM

Section 1.3 - Linear Equations in Two Variables

1. Estimate the slope of the line.



a. 5.5
b. 3.5
c. 4.5
d. 6.5
e. Undefined

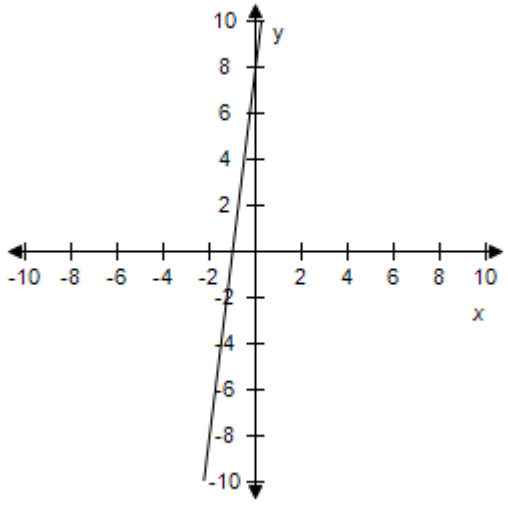
ANSWER: b
POINTS: 1
REFERENCES: 2.1.13
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/24/2014 4:22 AM

2. Find the slope and y-intercept (if possible) of the equation of the line. Select the correct answer for the line.

$y = 8x + 1$

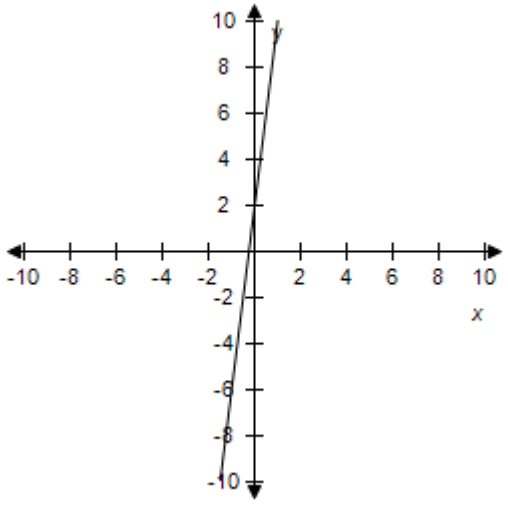
Section 1.3 - Linear Equations in Two Variables

a.



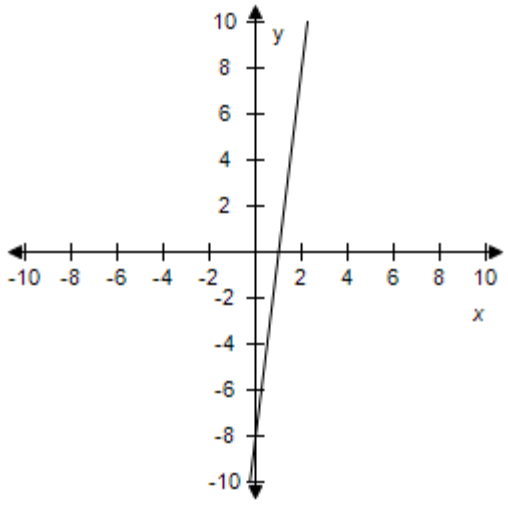
$m = -8$
y-intercept: (0, 1)

b.



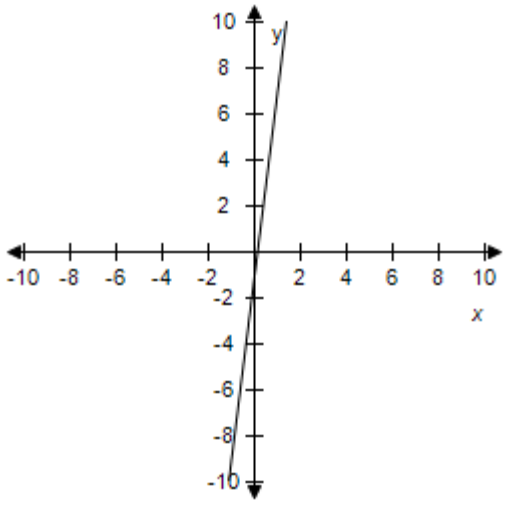
$m = -1$
y-intercept: (0, 1)

c.



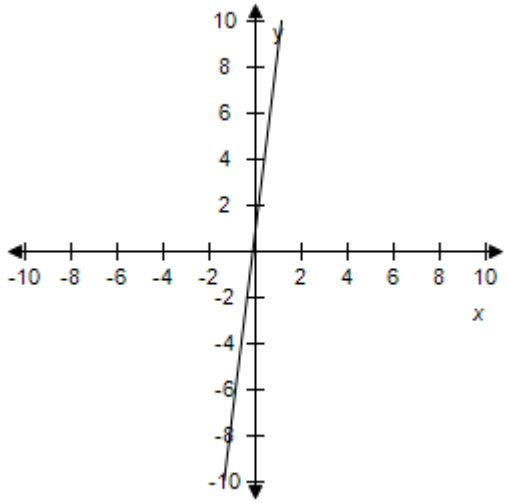
m is undefined.
y-intercept: (0, 1)

d.



$m = 1$
y-intercept: (0, 1)

e.



$m = 8$
y-intercept: (0, 1)

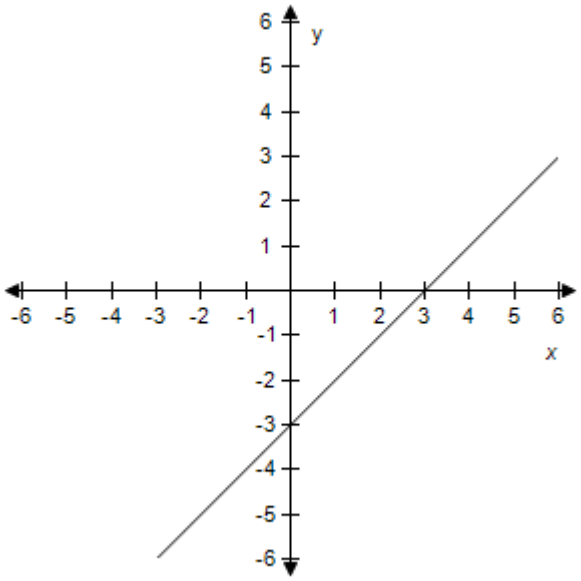
ANSWER: e
POINTS: 1
REFERENCES: 2.1.17
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 5:48 AM

3. Find the slope and y-intercept (if possible) of the equation of the line. Select the correct answer for the line.

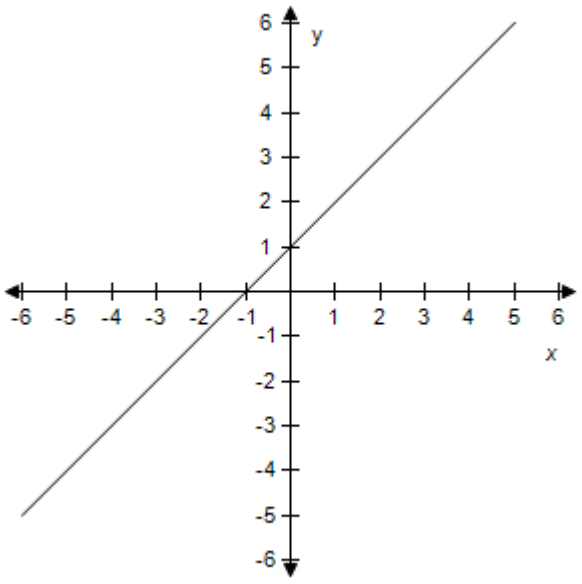
$y = x - 3$

a.

b.

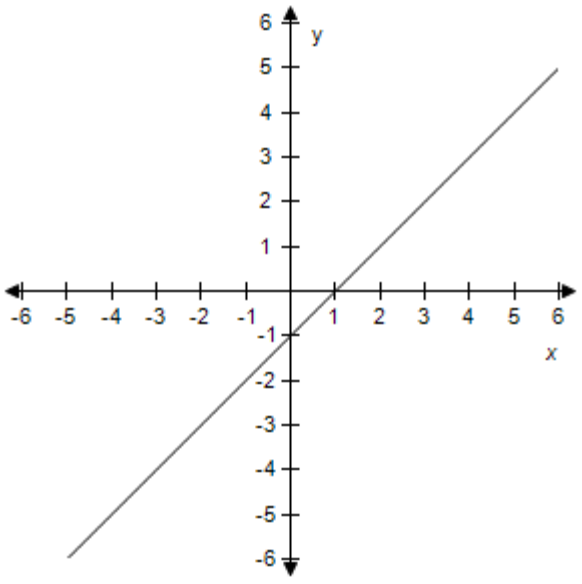


Section 1.3 - Linear Equations in Two Variables



$m = -1$
y-intercept: (0, 3)

c.

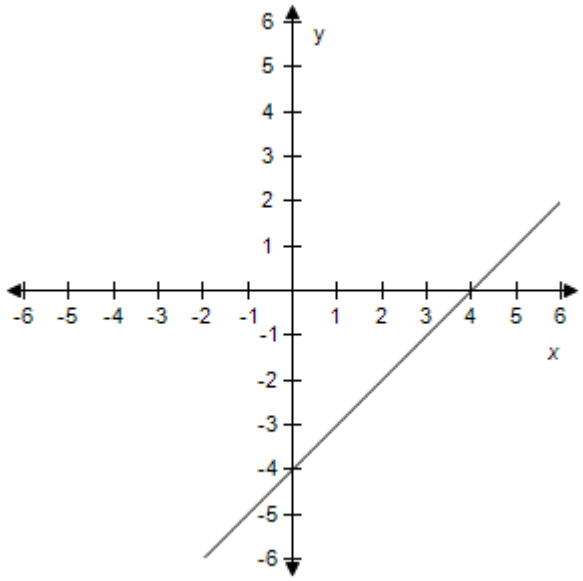


m is undefined.
y-intercept: (0, 3)

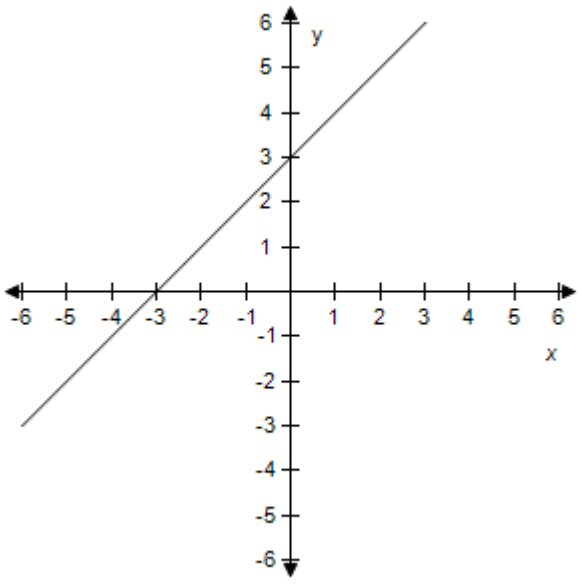
e.

$m = 1$
y-intercept: (0, –3)

d.



$m = 3$
y-intercept: (0, 3)



$m = -3$
y-intercept: $(0, -3)$

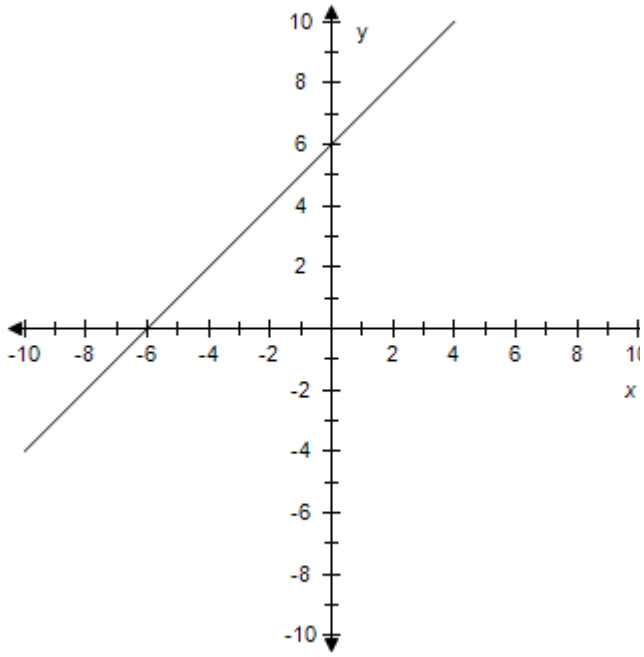
ANSWER: b
POINTS: 1
REFERENCES: 2.1.18
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 5:46 AM

4. Find the slope and y-intercept (if possible) of the equation of the line. Select the line.

$$y = -\frac{1}{6}x + 6$$

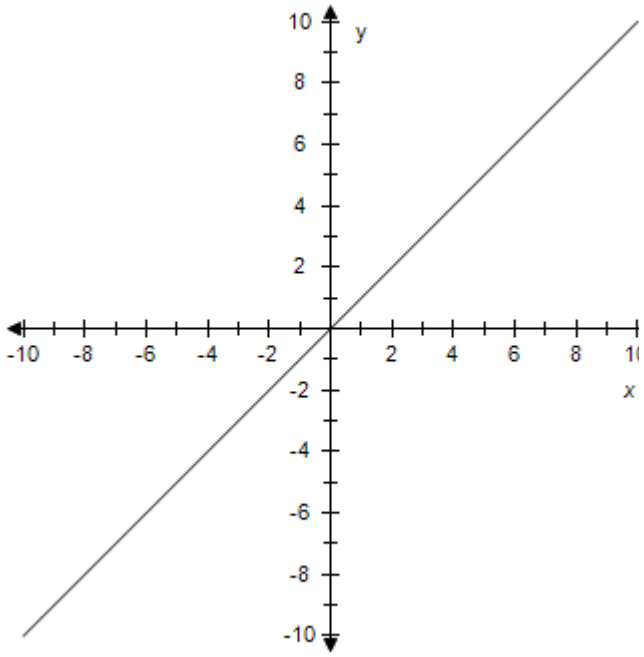
Section 1.3 - Linear Equations in Two Variables

a.



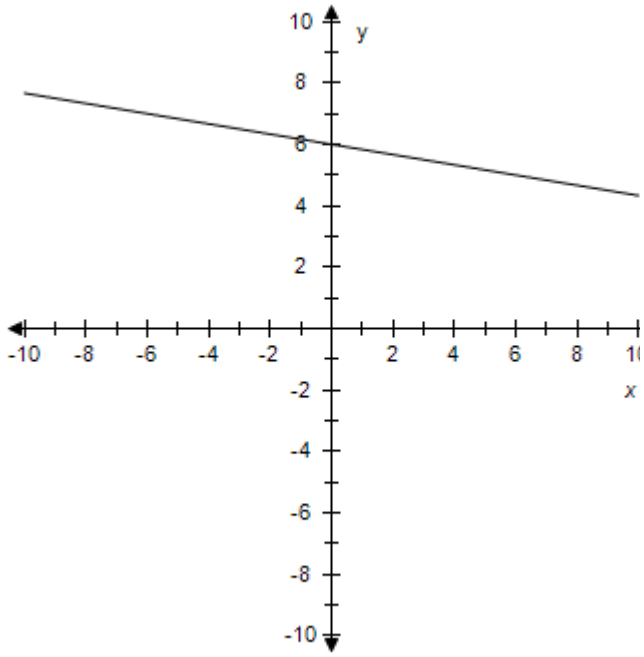
$m = -6$
y-intercept: (0, 6)

b.



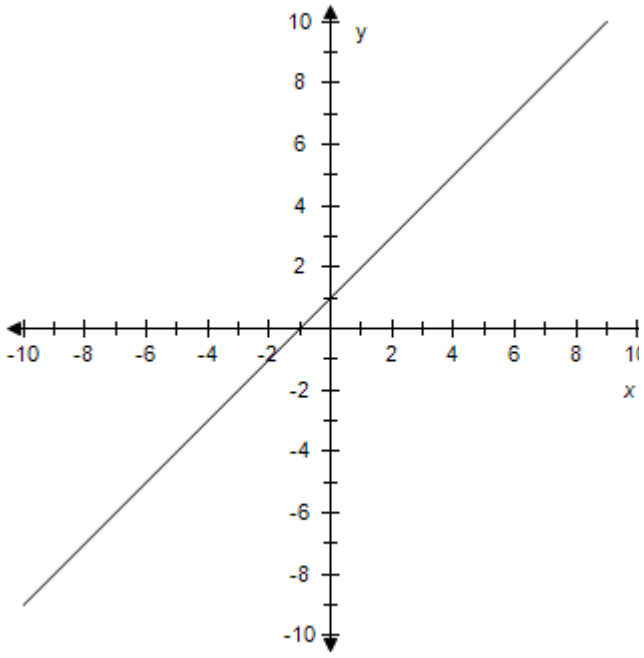
m is undefined.
y-intercept: (0, 6)

c.



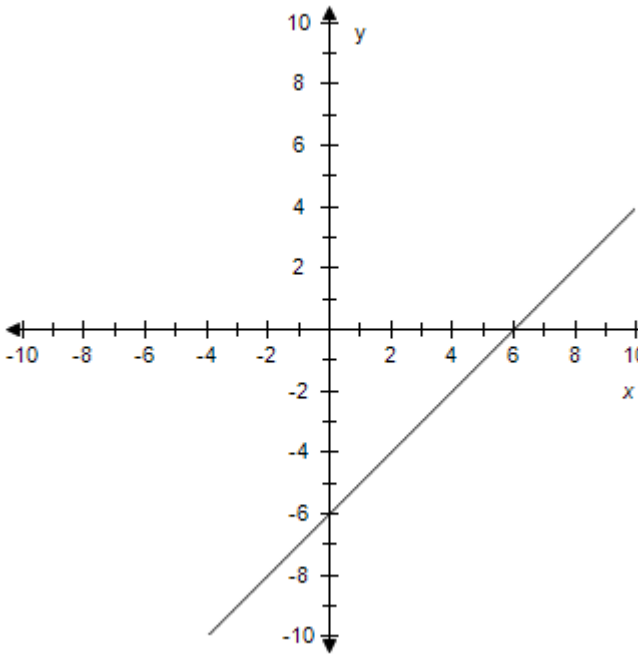
$m = -\frac{1}{6}$
y-intercept: (0, 6)

d.



$m = -1$
y-intercept: (0, 6)

e.



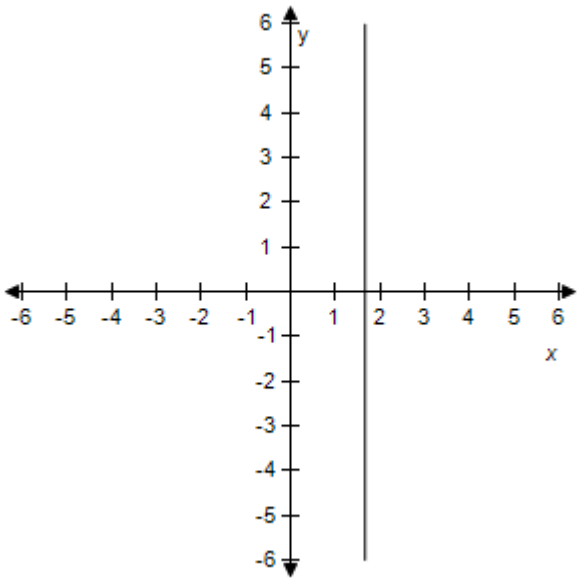
$m = 6$
y-intercept: (0, 6)

ANSWER: c
POINTS: 1
REFERENCES: 2.1.19
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 5:45 AM

5. Find the slope and y-intercept (if possible) of the equation of the line. Select the correct answer for the line.

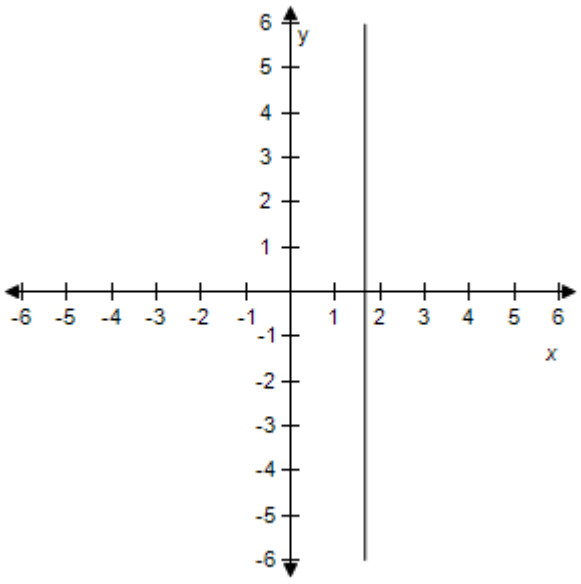
$3x - 5 = 0$

a.



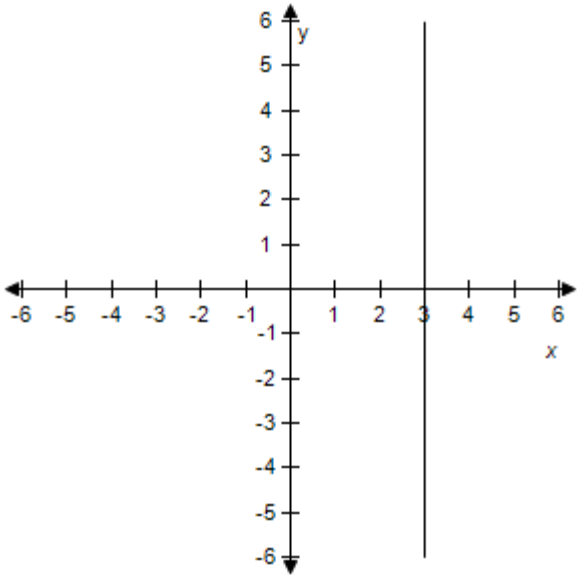
m is undefined.
There is no *y*-intercept.

b.



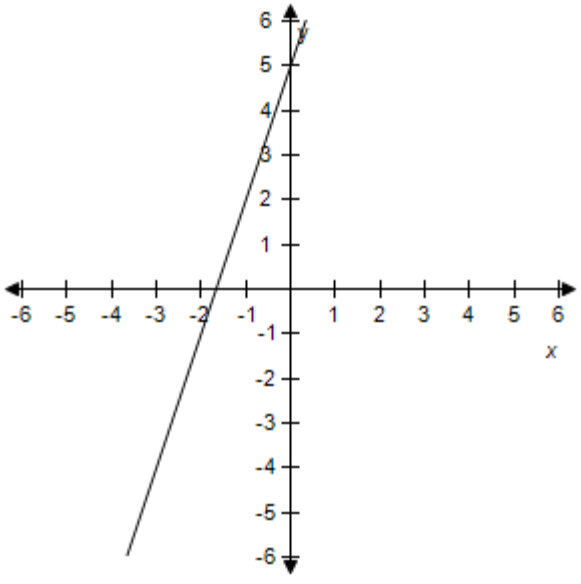
m = –3
y-intercept: (0, 5)

c.



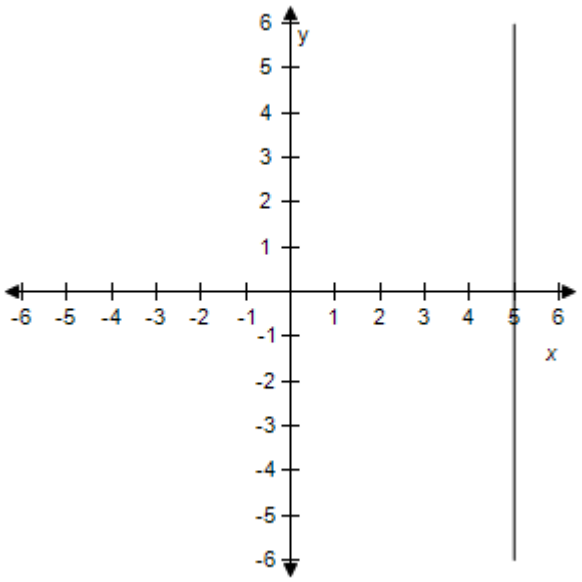
m is undefined.
There is no *y*-intercept.

d.



m = –5
y-intercept: (0, 3)

e.



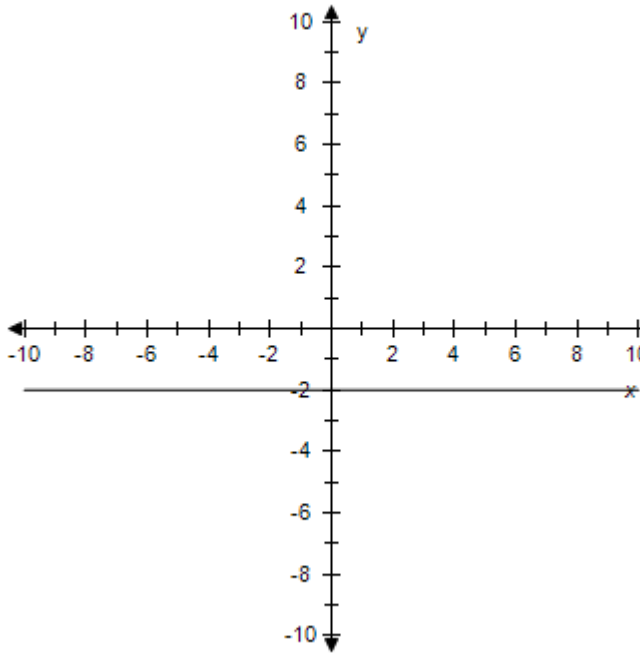
m is undefined.
There is no *y*-intercept.

ANSWER: a
POINTS: 1
REFERENCES: 2.1.21
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 5:50 AM

6. Find the slope and *y*-intercept (if possible) of the equation of the line. Select the correct answer for the line.

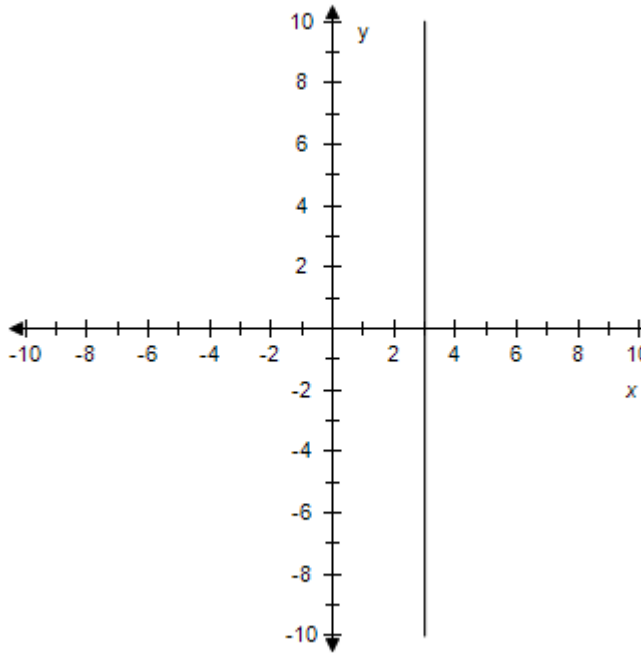
$3y + 6 = 0$

a.



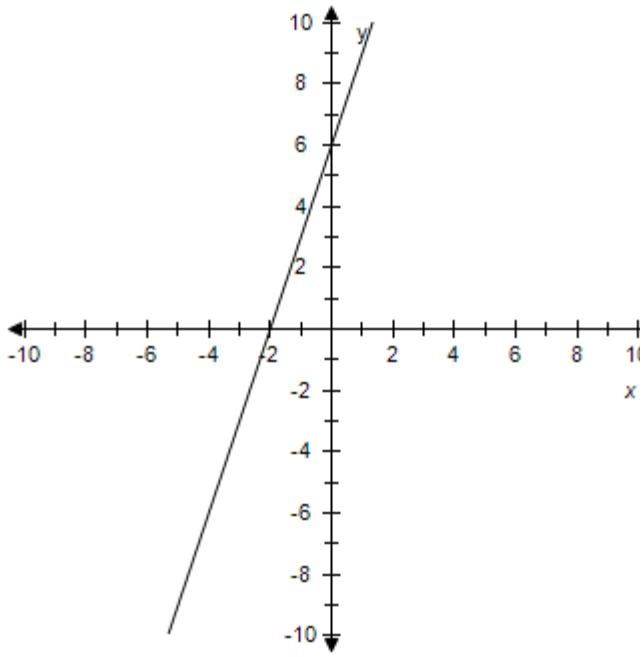
$m = 0$
y-intercept: $(0, -2)$

b.



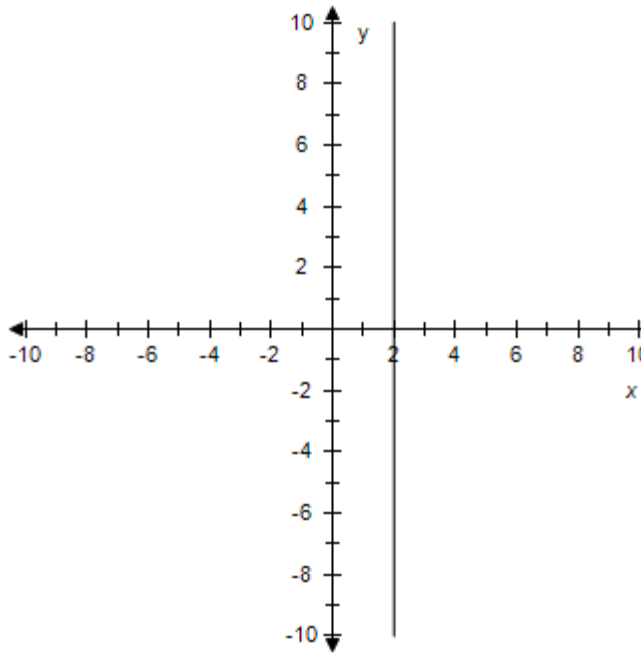
$m = 0$
There is no y-intercept.

c.



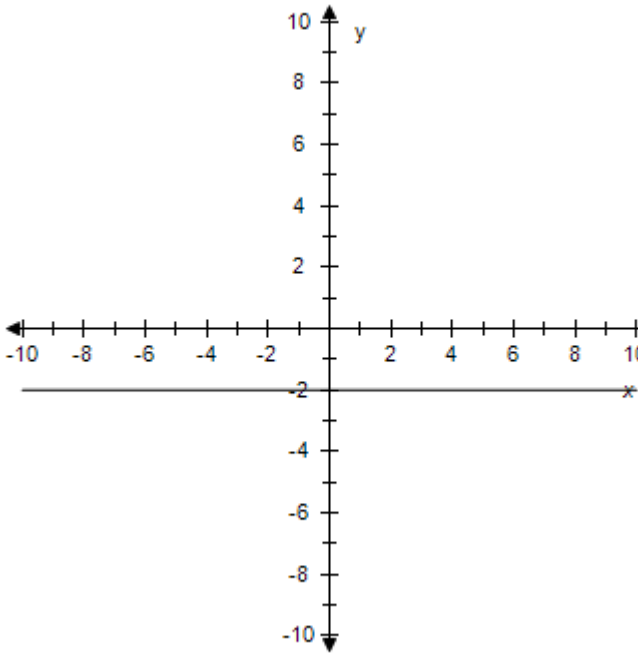
$m = -6$
y-intercept: $(0, 3)$

d.



$m = -3$
y-intercept: $(0, 6)$

e.



m is undefined.
y-intercept: $(0, -2)$

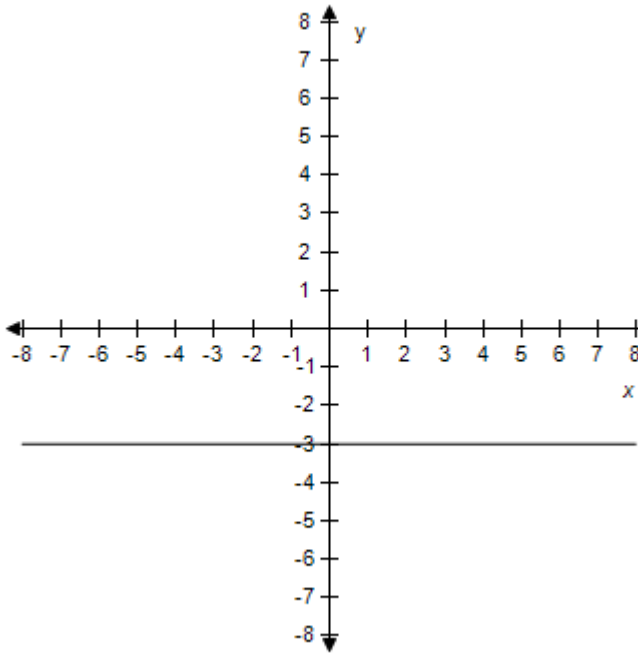
ANSWER: a
POINTS: 1
REFERENCES: 2.1.22
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 5:53 AM

7. Find the slope and y-intercept (if possible) of the equation of the line. Select the correct answer for the line.

$y - 3 = 0$

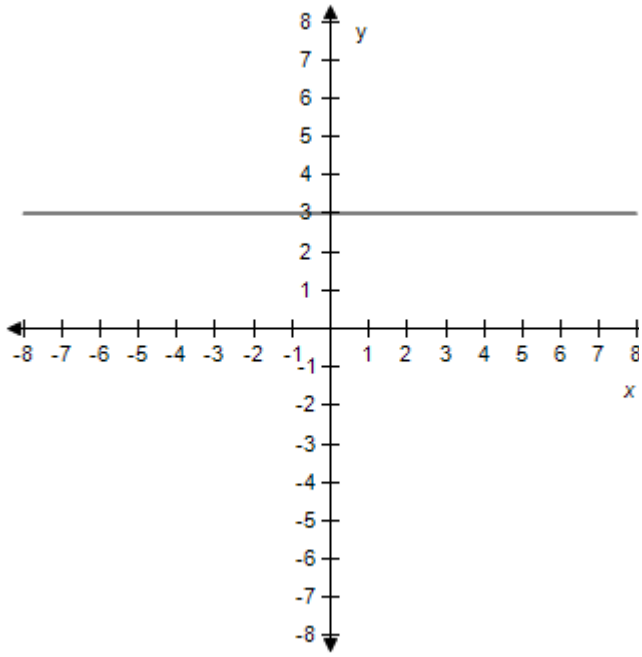
Section 1.3 - Linear Equations in Two Variables

a.



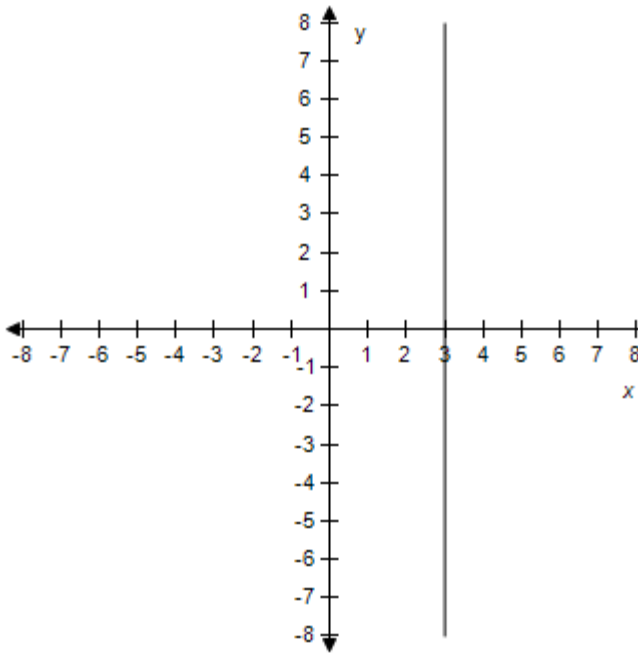
$m = -3$
y-intercept: $(0, -3)$

b.



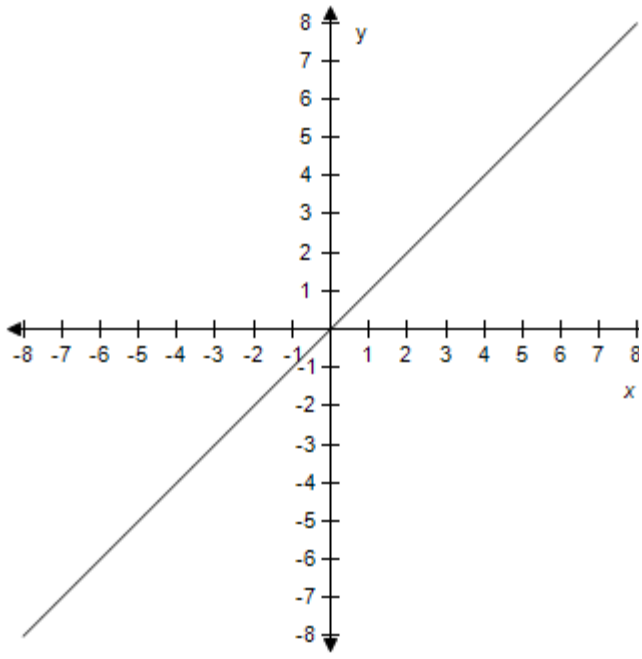
$m = 0$
y-intercept: $(0, 3)$

c.



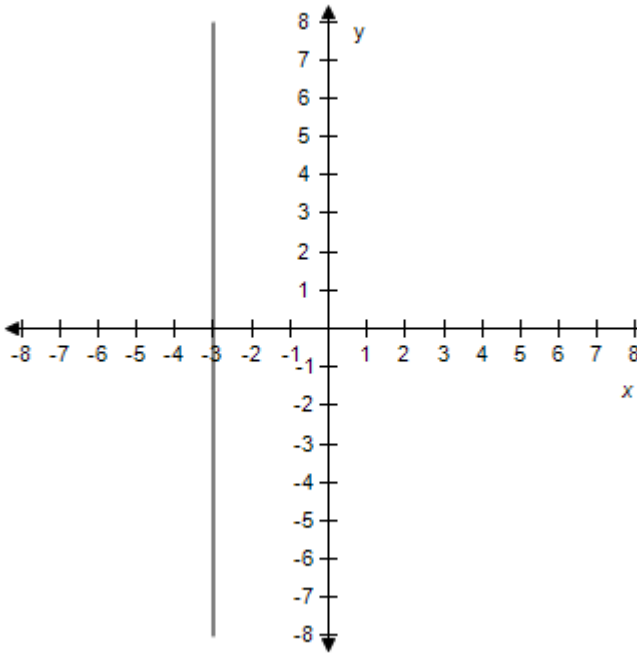
m is undefined.
There is no y-intercept.

d.



$m = 0$
There is no y-intercept.

e.



$m = 0$

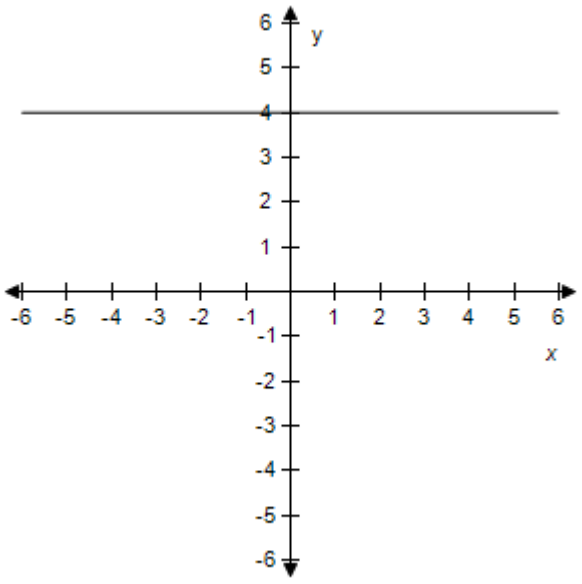
There is no y-intercept.

ANSWER: b
POINTS: 1
REFERENCES: 2.1.25
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 5:57 AM

8. Find the slope and y-intercept (if possible) of the equation of the line. Select the correct answer for the line.

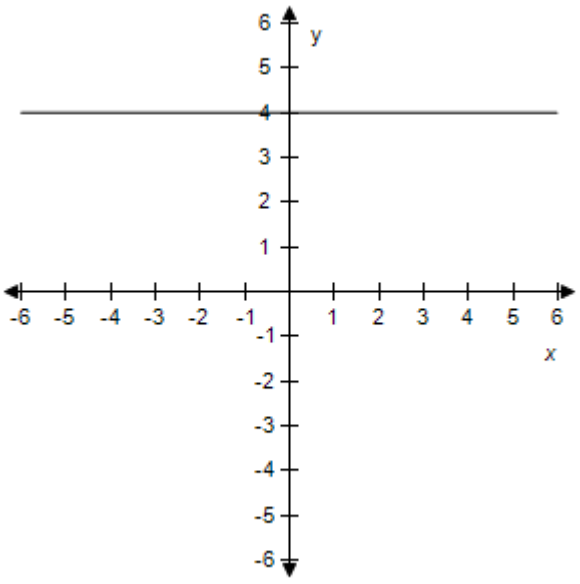
$y + 4 = 0$

a.



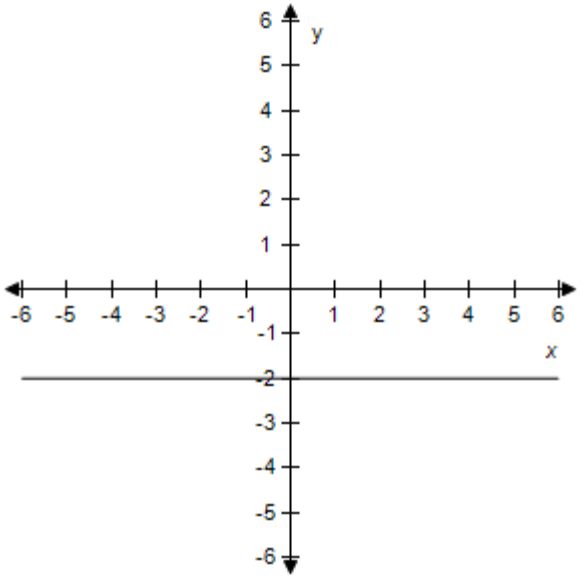
$m = 0$
y-intercept: (0,4)

b.



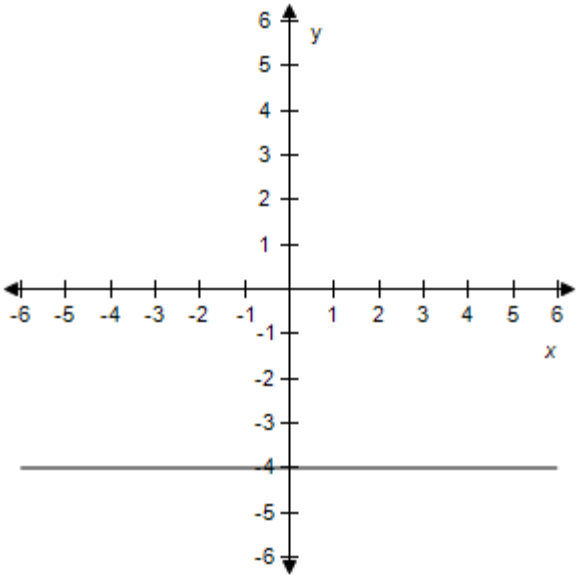
$m = 0$
y-intercept: (0,–4)

c.



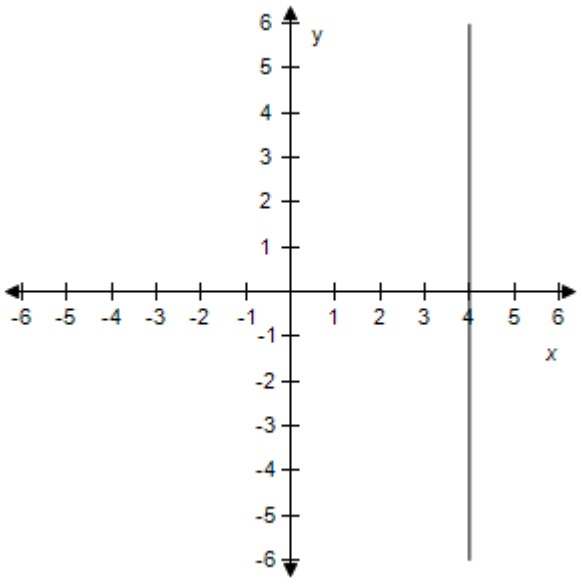
m is undefined.
There is no y-intercept.

d.



$m = 0$
y-intercept: (0,–4)

e.



$m = 0$

There is no y-intercept.

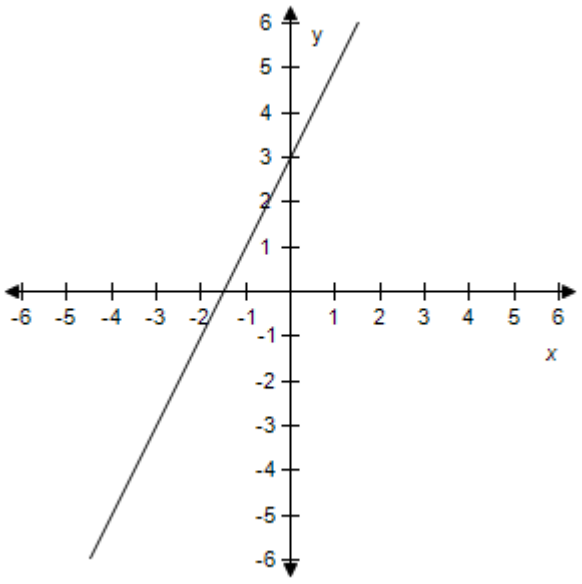
ANSWER: d
POINTS: 1
REFERENCES: 2.1.26
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 5:59 AM

9. Find the slope and y-intercept (if possible) of the equation of the line. Select the correct answer for the line.

$x + 3 = 0$

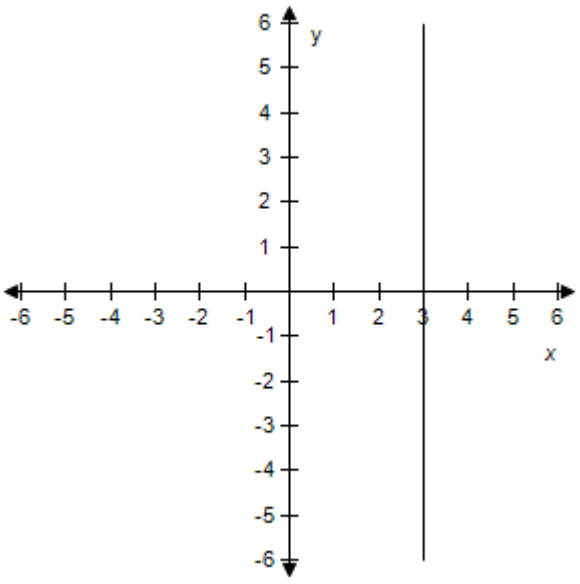
Section 1.3 - Linear Equations in Two Variables

a.



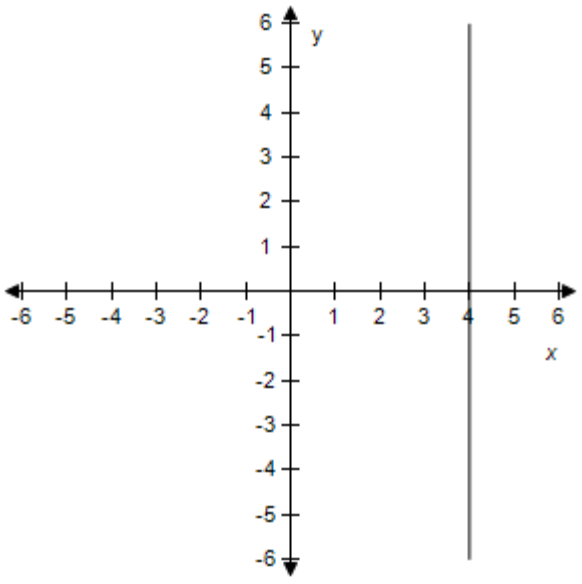
$m = -3$
y-intercept: (0,2)

b.



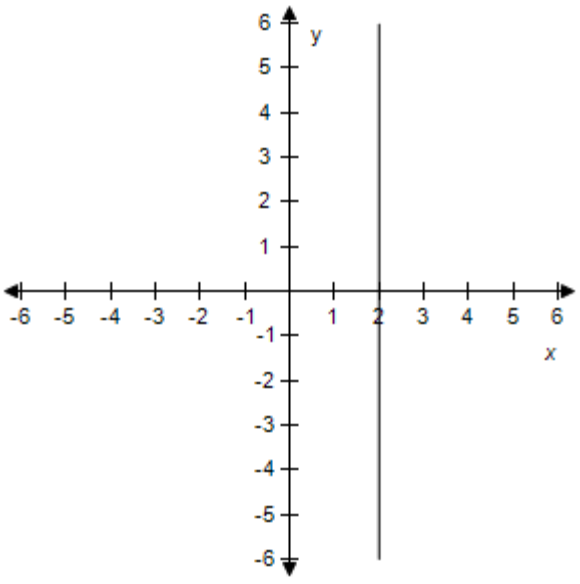
m is undefined.
There is no y-intercept.

c.



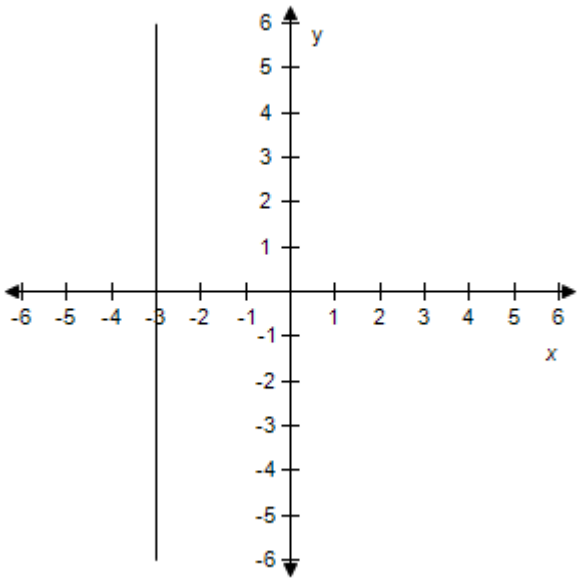
$m = -2$
y-intercept: (0,3)

d.



m is undefined.
There is no y-intercept.

e.



m is undefined.
There is no *y*-intercept.

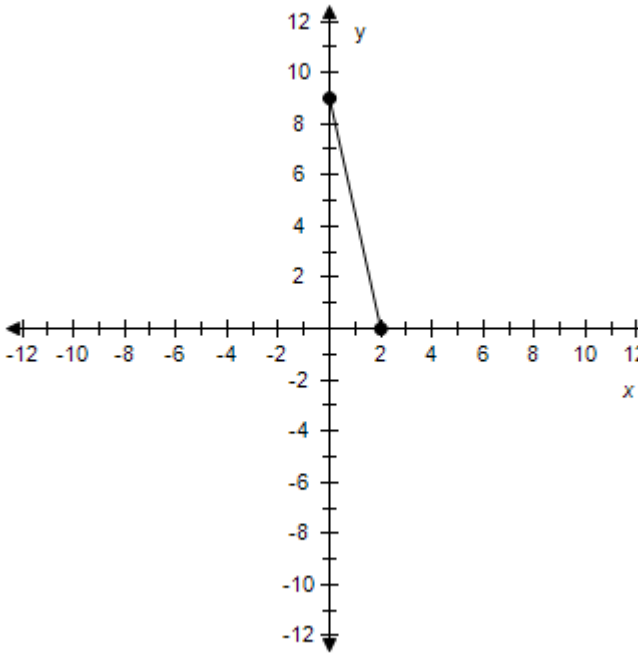
ANSWER: e
POINTS: 1
REFERENCES: 2.1.27
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 6:02 AM

10. Find the slope of the line passing through the given pair of points.

(0, 9), (2, 0)

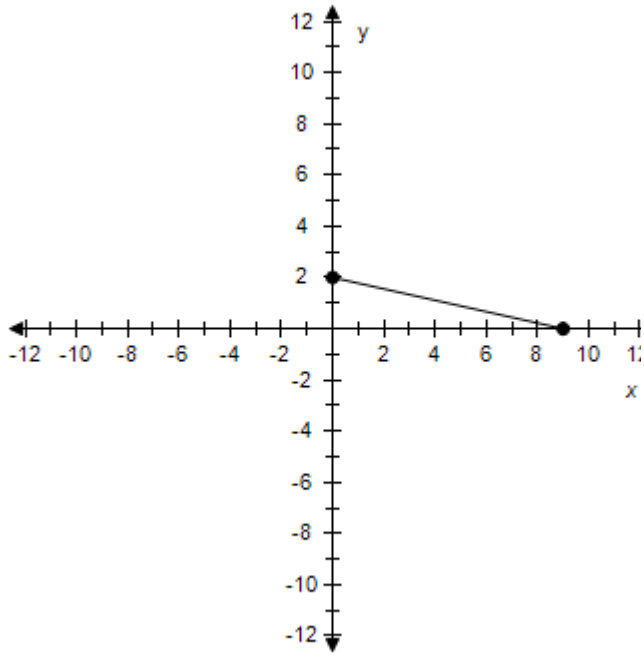
Section 1.3 - Linear Equations in Two Variables

a.



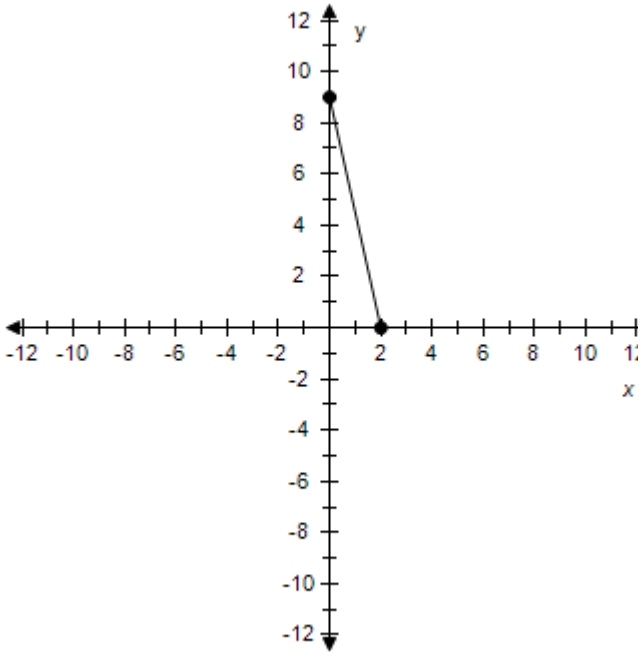
$m = -\frac{2}{9}$

b.



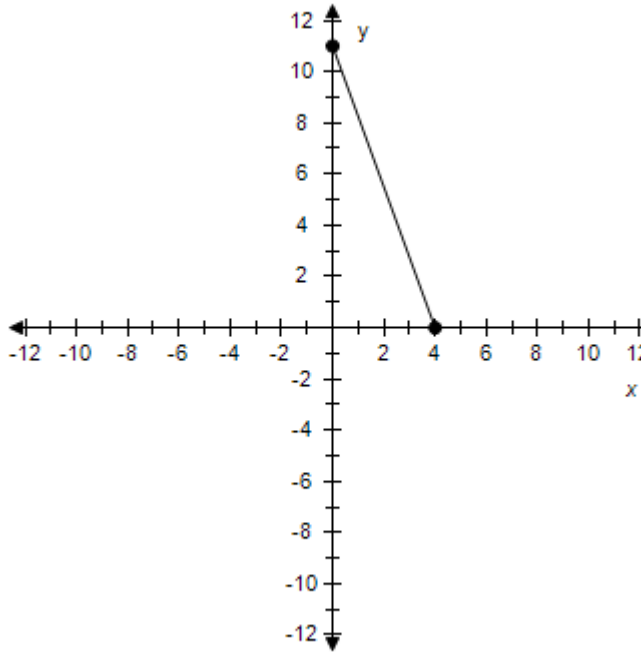
$m = \frac{9}{2}$

c.



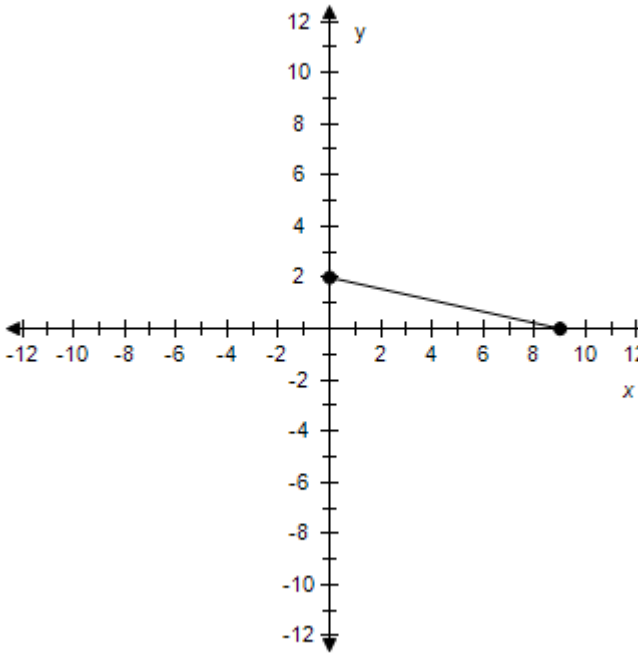
$m = -\frac{9}{2}$

d.



$m = \frac{4}{11}$

e.



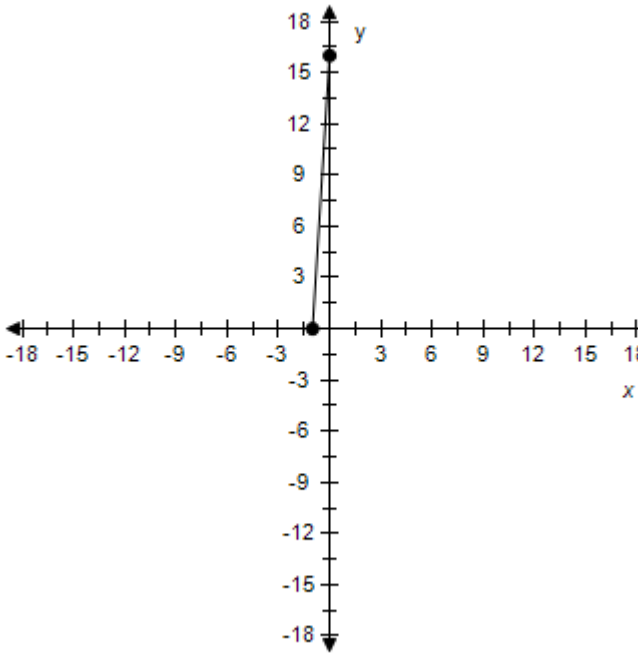
$m = -\frac{9}{2}$

ANSWER: c
POINTS: 1
REFERENCES: 2.1.29
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 6:06 AM

11. Find the slope of the line passing through the pair of points.

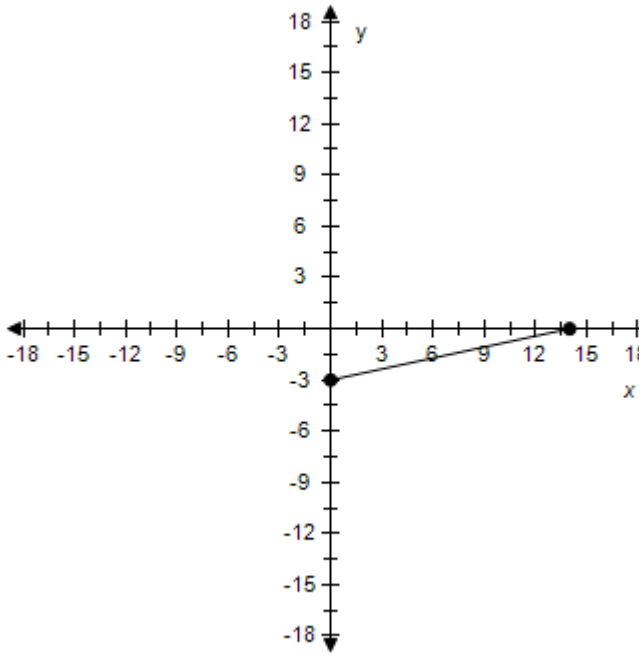
(14, 0), (0, –3)

a.



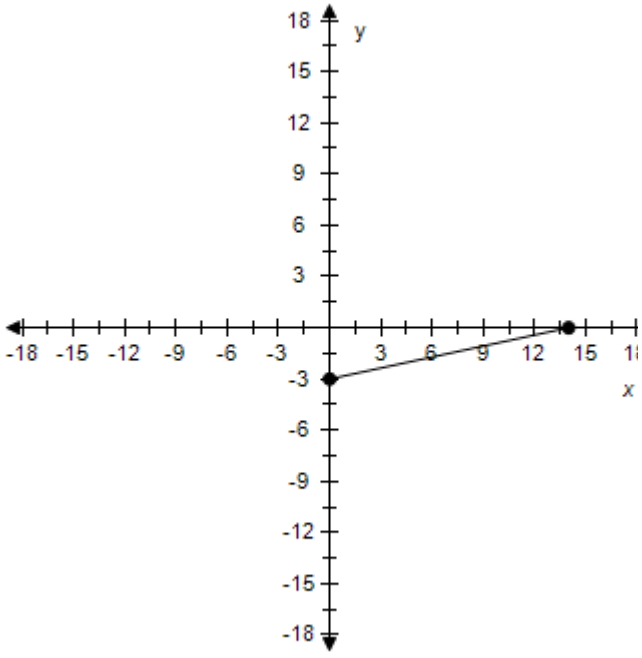
$m = -\frac{1}{16}$

b.



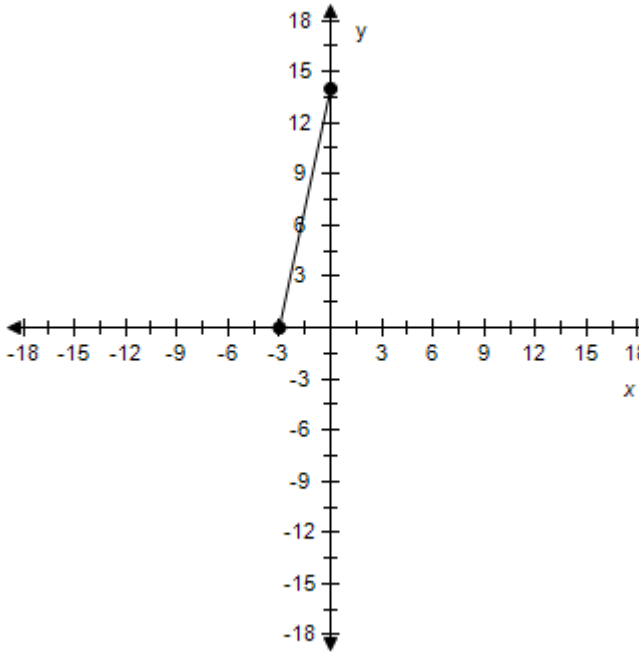
$m = \frac{14}{3}$

c.



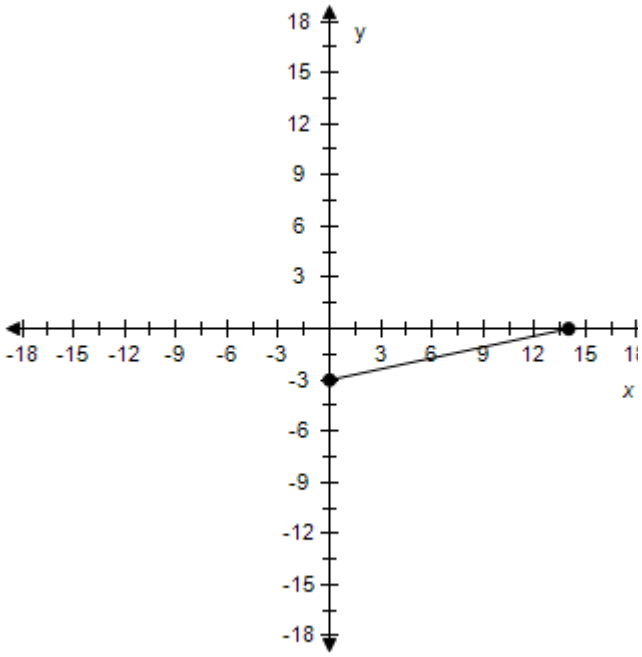
$m = \frac{3}{14}$

d.



$m = -\frac{3}{14}$

e.



$m = -\frac{14}{3}$

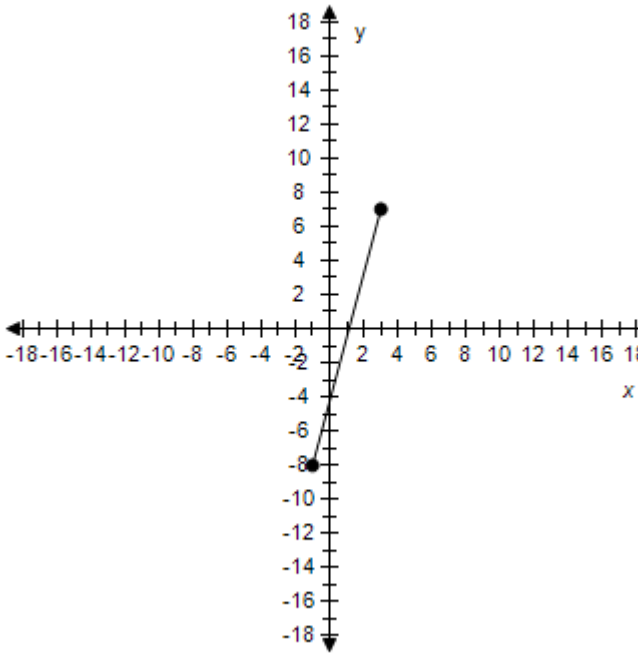
ANSWER: c
POINTS: 1
REFERENCES: 2.1.30
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 6:34 AM

12. Find the slope of the line passing through the pair of points.

(–1, –8), (3, 7)

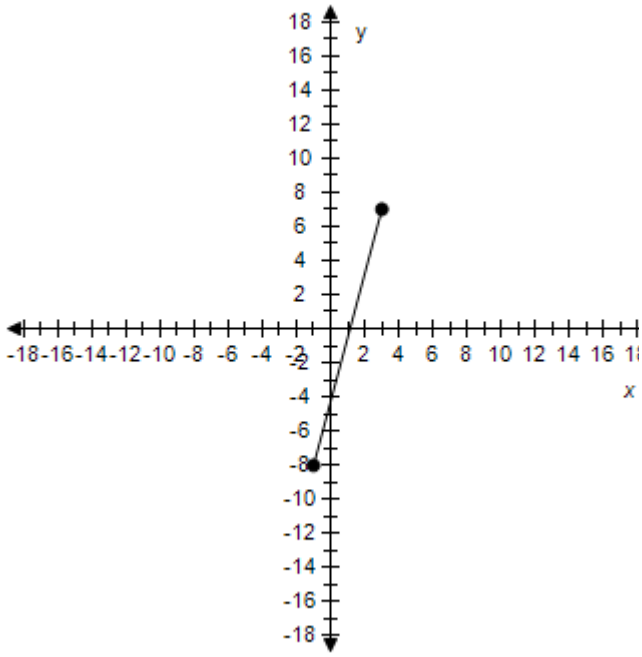
Section 1.3 - Linear Equations in Two Variables

a.



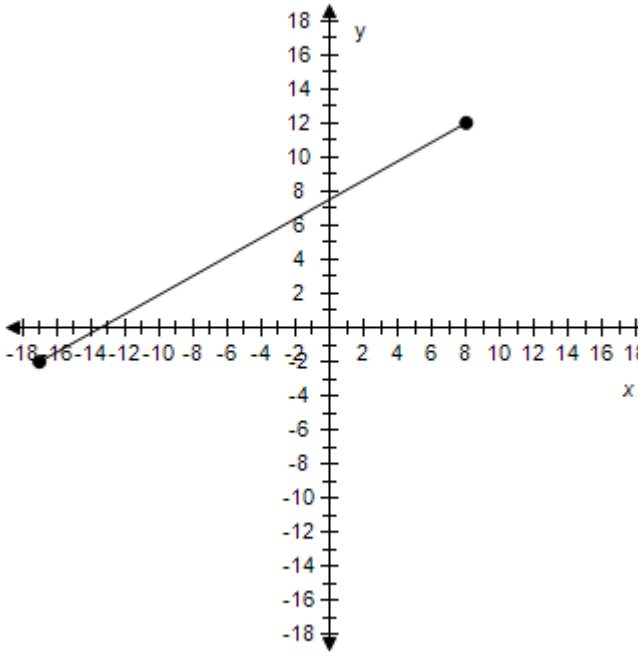
$m = -\frac{1}{2}$

b.



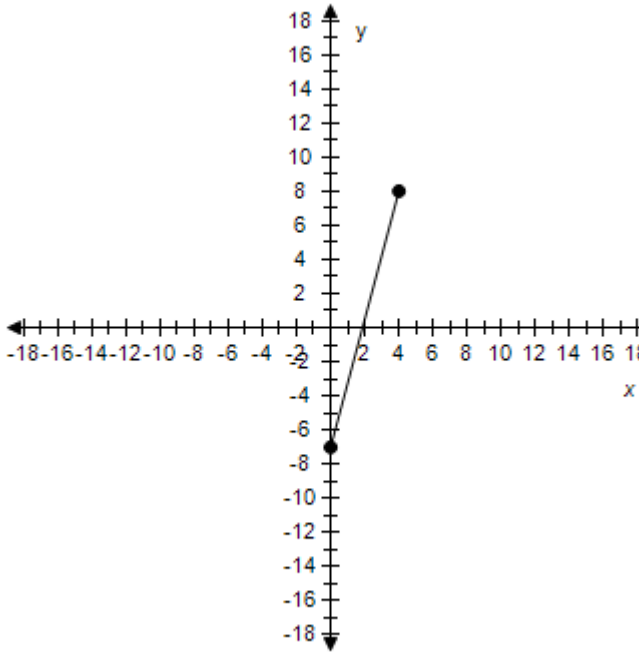
$m = \frac{15}{4}$

c.



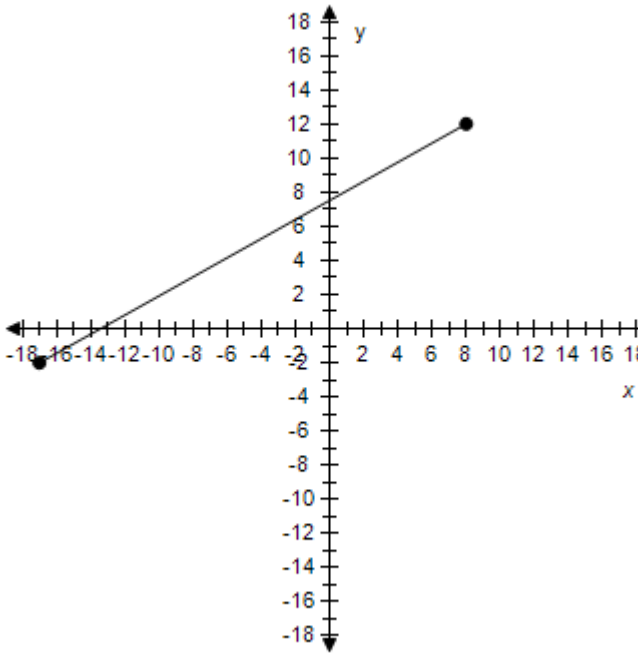
$m = -\frac{4}{15}$

d.



$m = -\frac{15}{4}$

e.



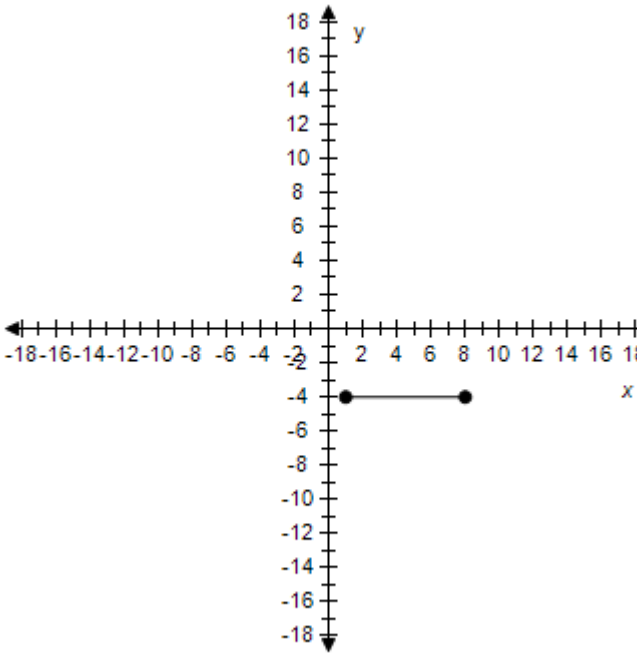
$m = \frac{4}{15}$

ANSWER: b
POINTS: 1
REFERENCES: 2.1.31
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 6:37 AM

13. Find the slope of the line passing through the pair of points.

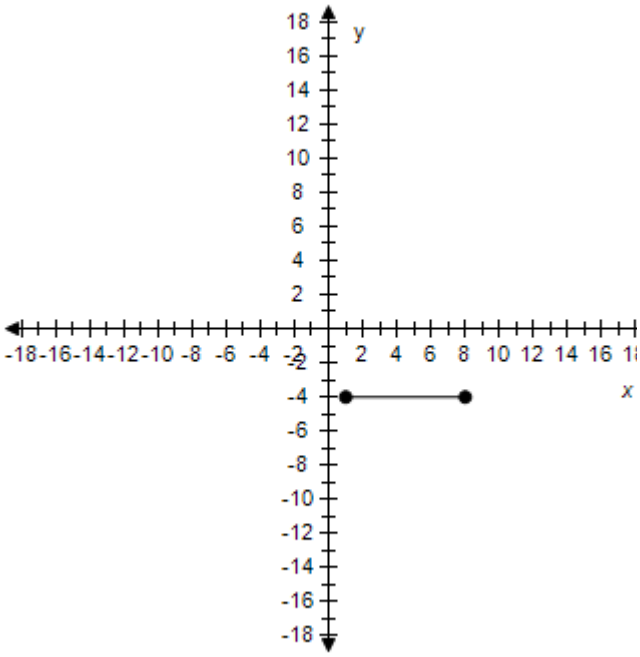
(8, –4), (1, –4)

a.



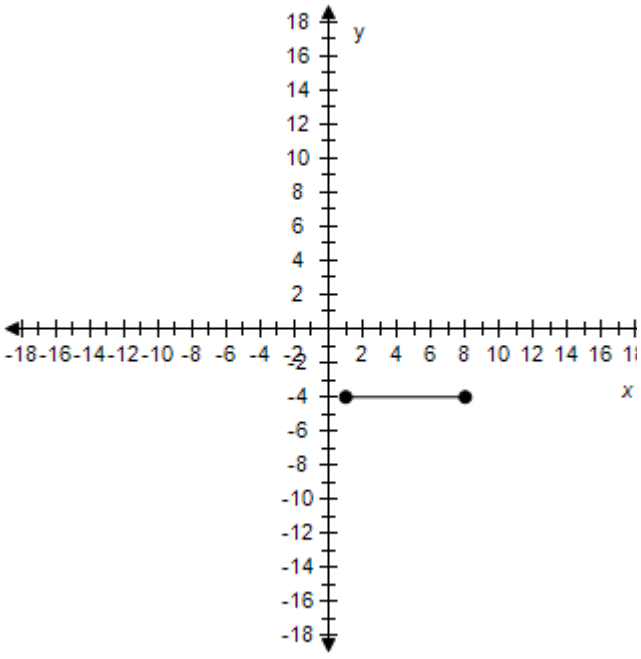
$m = 0$

b.



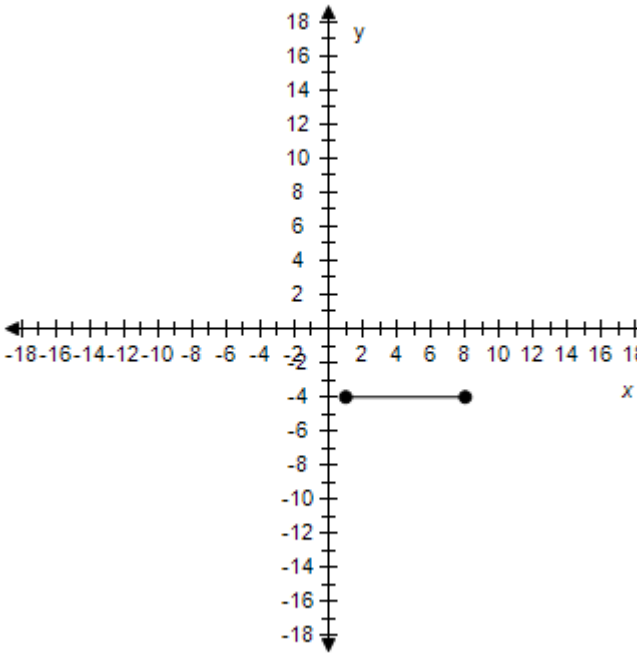
$m = -\frac{1}{8}$

c.



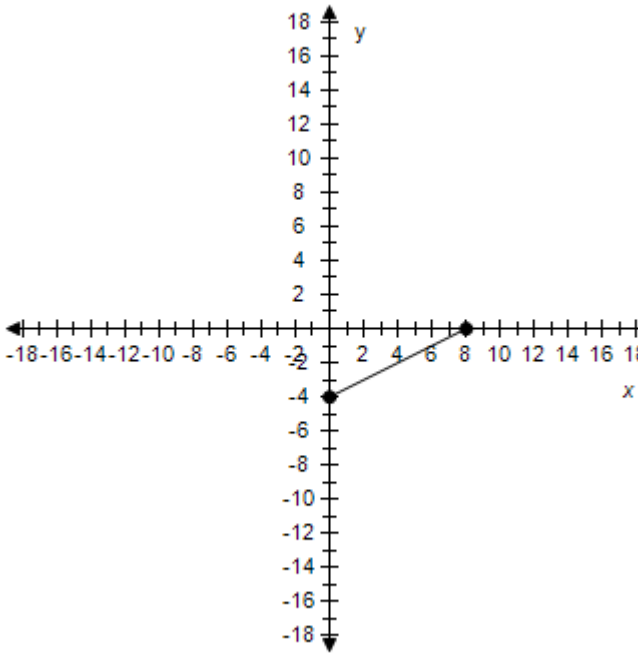
$m = -\frac{8}{9}$

d.



m is undefined

e.



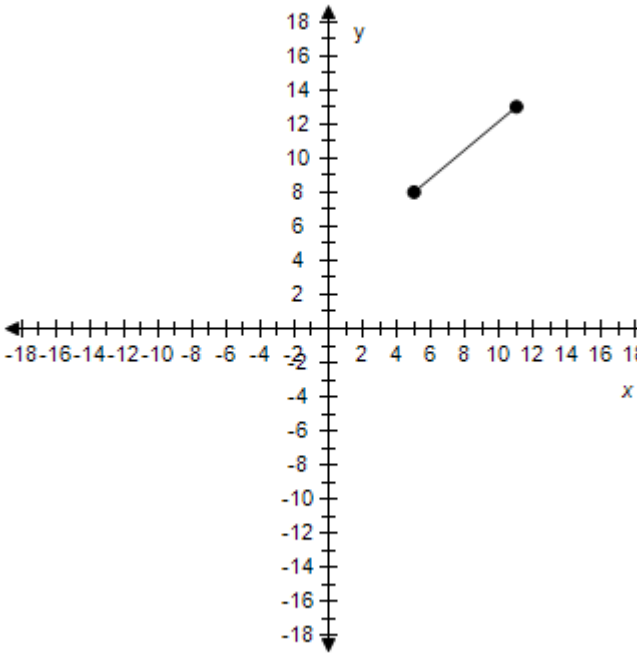
$m = \frac{1}{3}$

ANSWER: a
POINTS: 1
REFERENCES: 2.1.33
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 6:39 AM

14. Find the slope of the line passing through the pair of points.

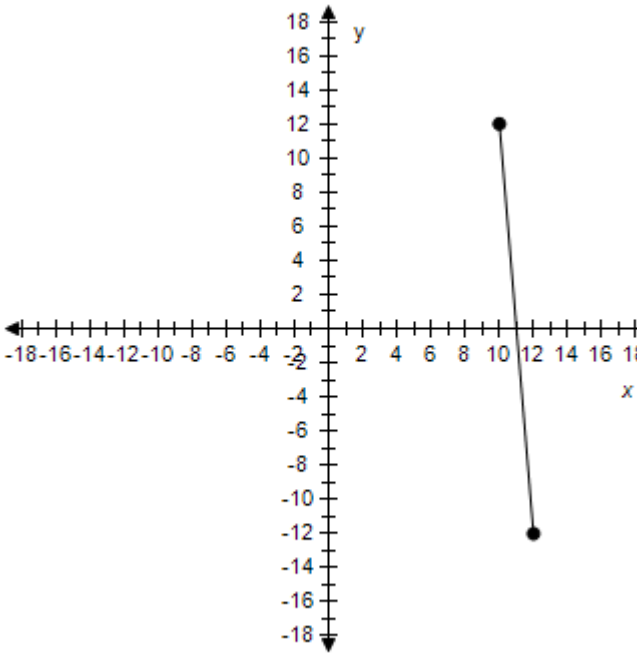
(10, 12), (12, –12)

a.



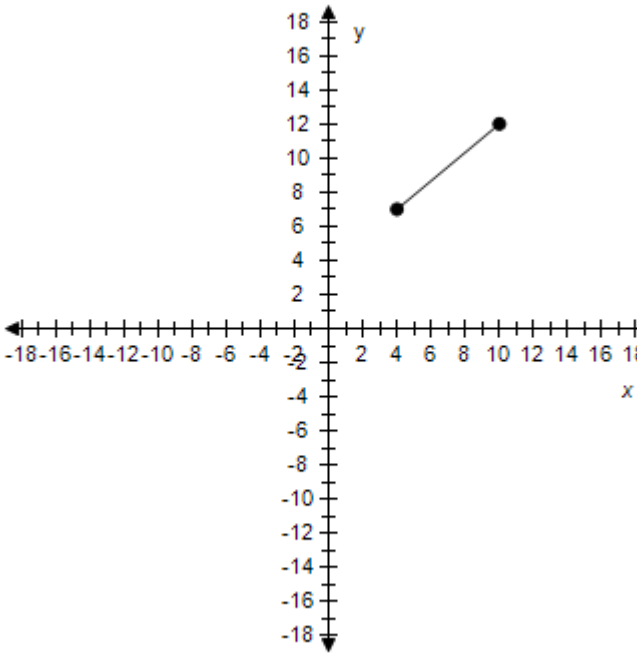
$m = -12$

b.



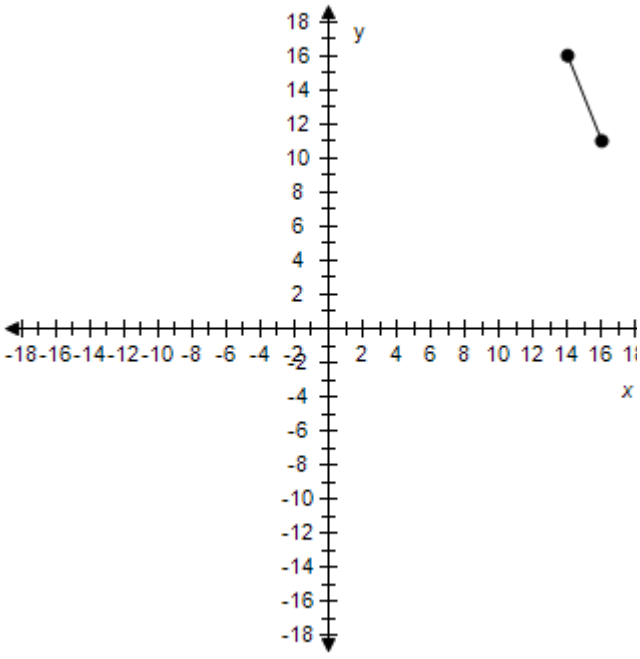
$m = -12$

c.



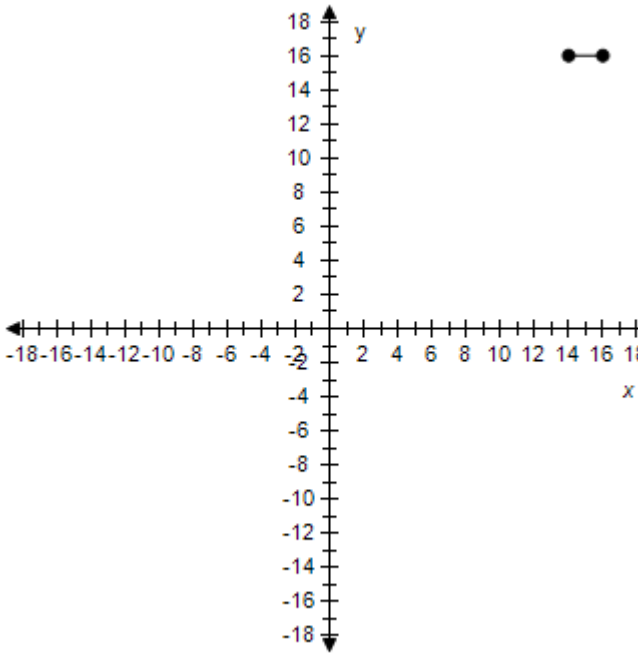
$m = \frac{19}{14}$

d.



$m = \frac{19}{14}$

e.



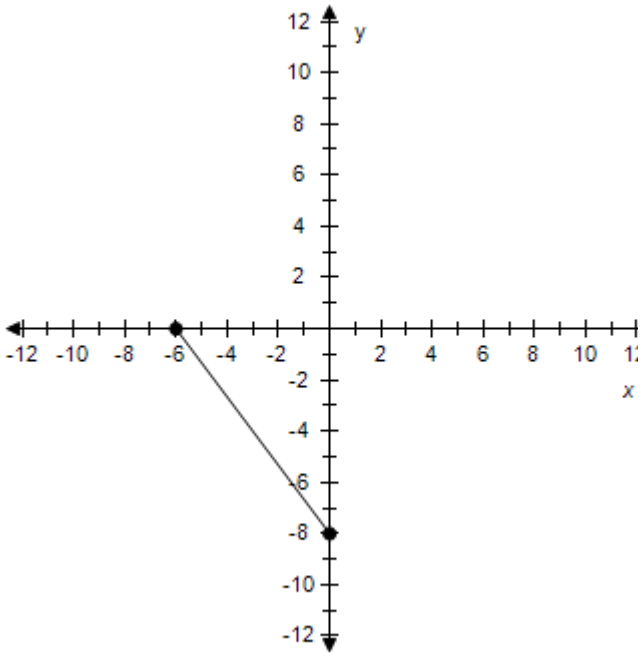
$m = \frac{6}{5}$

ANSWER: b
POINTS: 1
REFERENCES: 2.1.32
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 6:42 AM

15. Find the slope of the line passing through the pair of points.

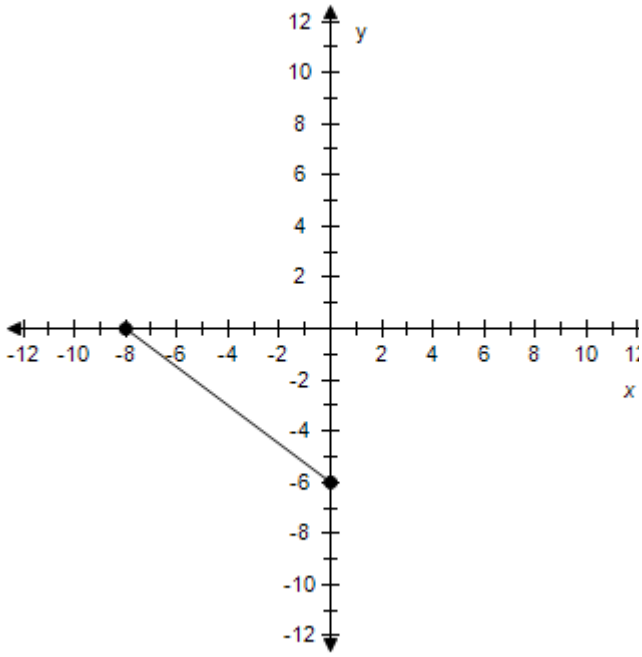
(0, –8), (–6, 0)

a.



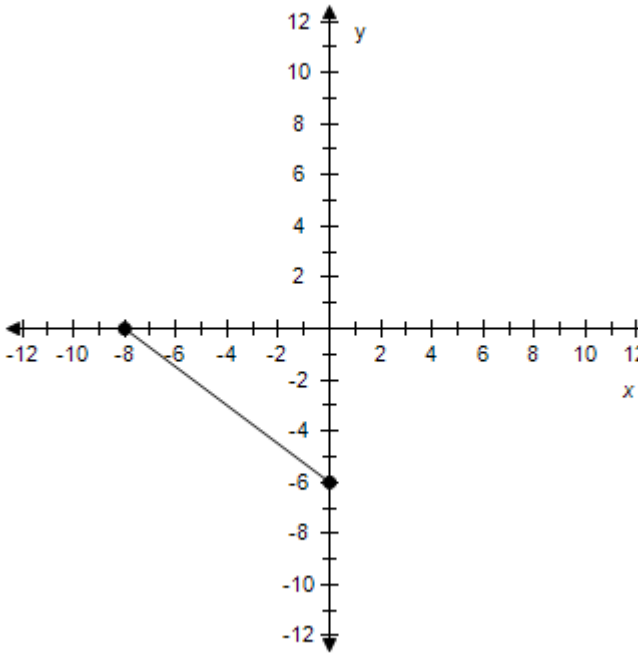
$m = \frac{4}{3}$

b.



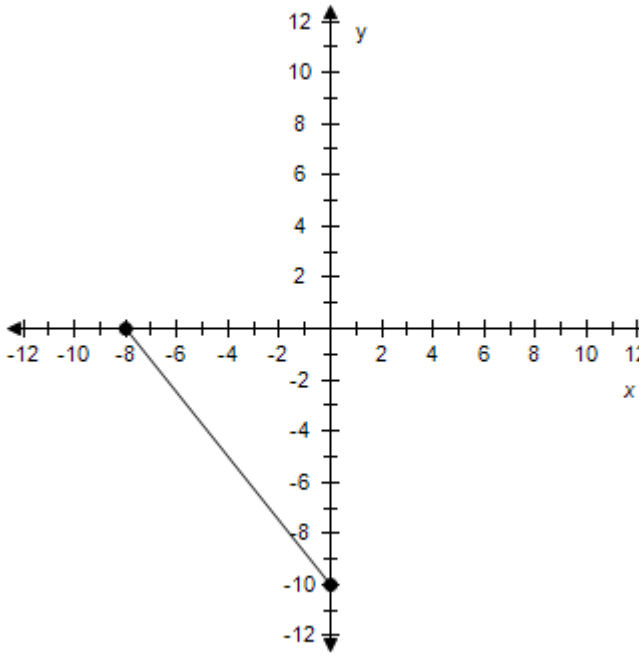
$m = \frac{4}{3}$

c.



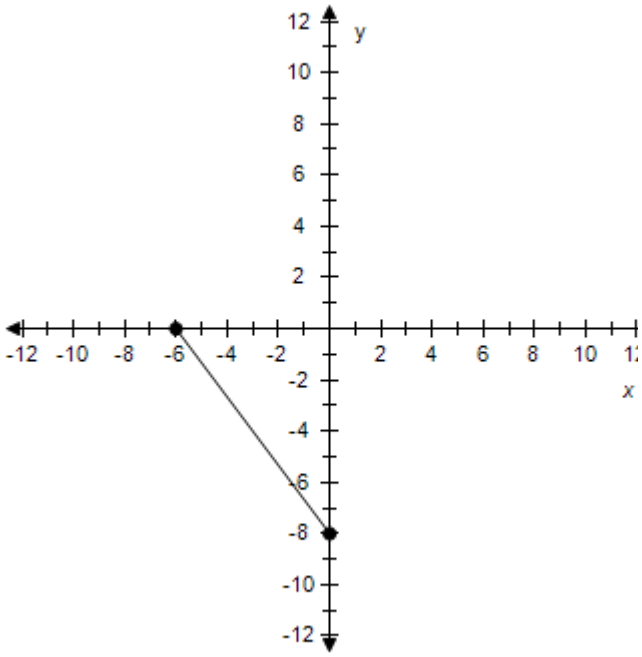
$m = -\frac{4}{3}$

d.



$m = \frac{2}{3}$

e.



$m = -\frac{4}{3}$

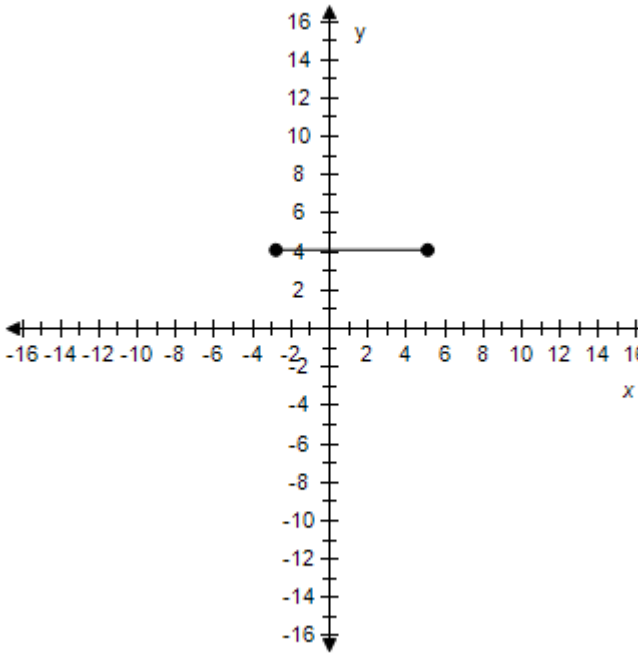
ANSWER: e
POINTS: 1
REFERENCES: 2.1.36
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 6:45 AM

16. Find the slope of the line passing through the pair of points.

(4.1, 3.1), (–3.8, 3.1)

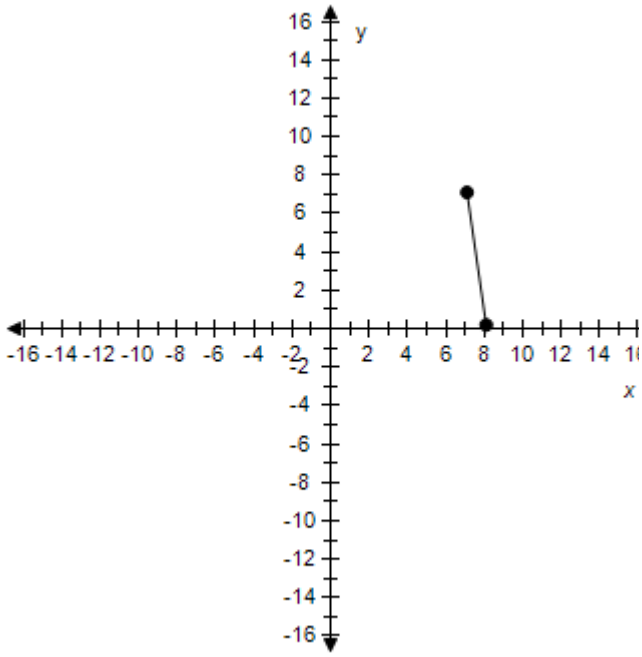
Section 1.3 - Linear Equations in Two Variables

a.



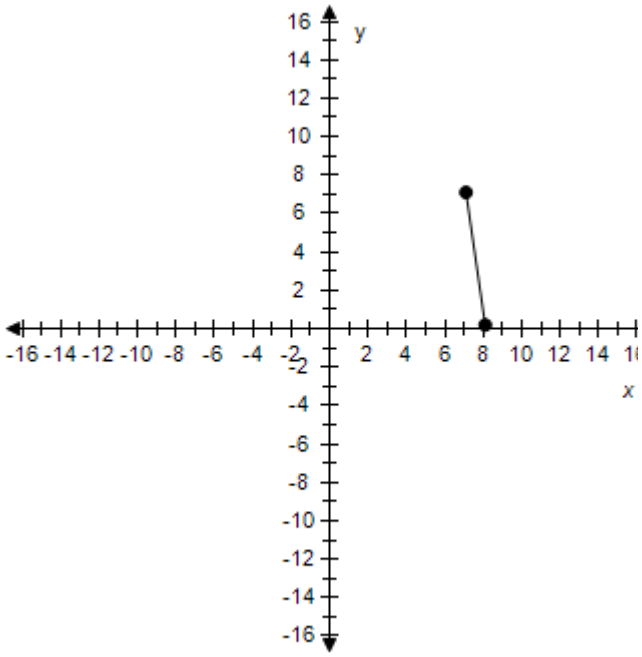
$m = 0.40$

b.



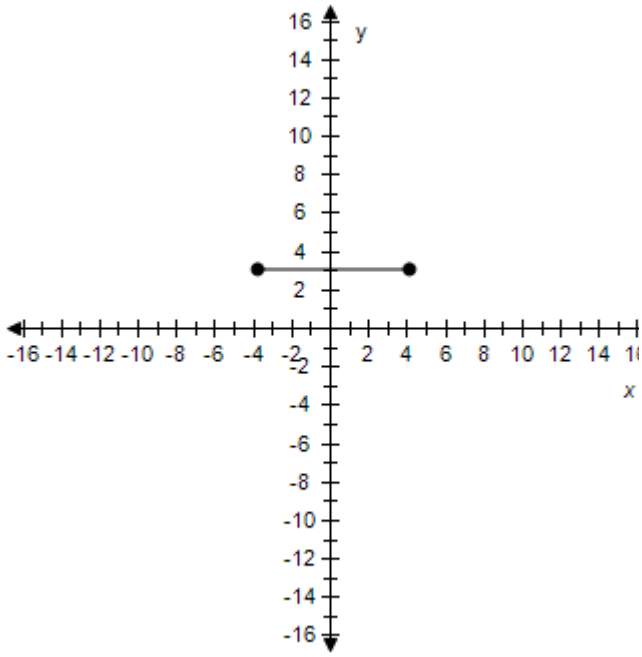
$m =$ –Infinity

c.



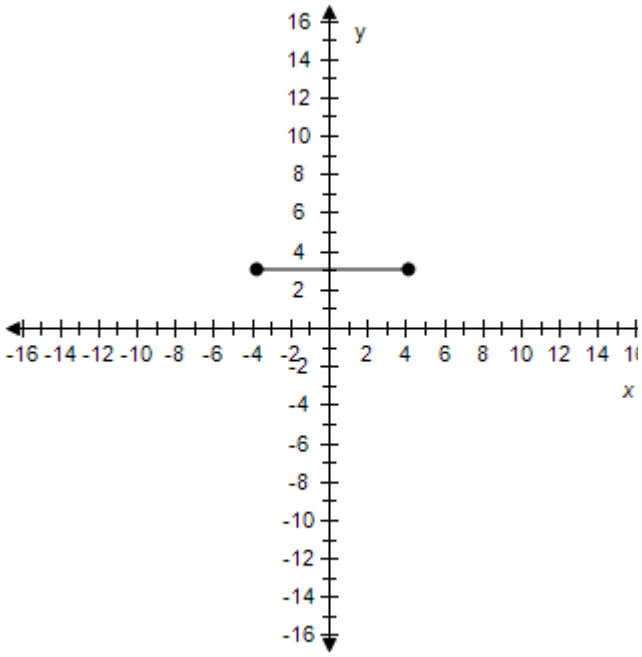
$m = 0.80$

d.



$m = 0.00$

e.



$m = 20.67$

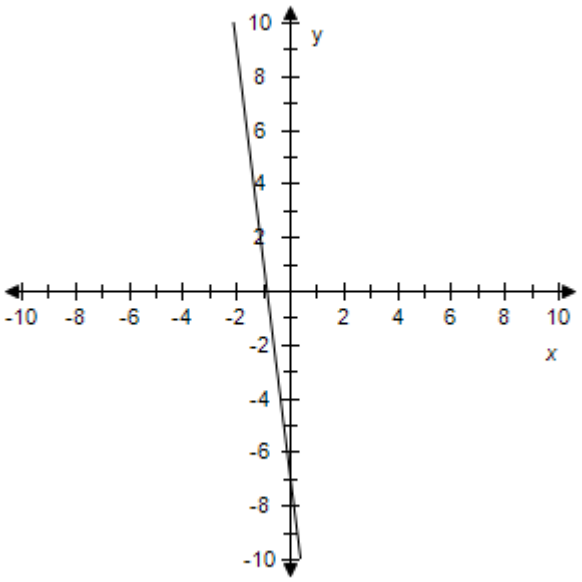
ANSWER: d
POINTS: 1
REFERENCES: 2.1.39
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/18/2015 5:22 AM

17. Find the slope-intercept form of the equation of the line that passes through the given point and has the indicated slope m. Select correct answer for the line.

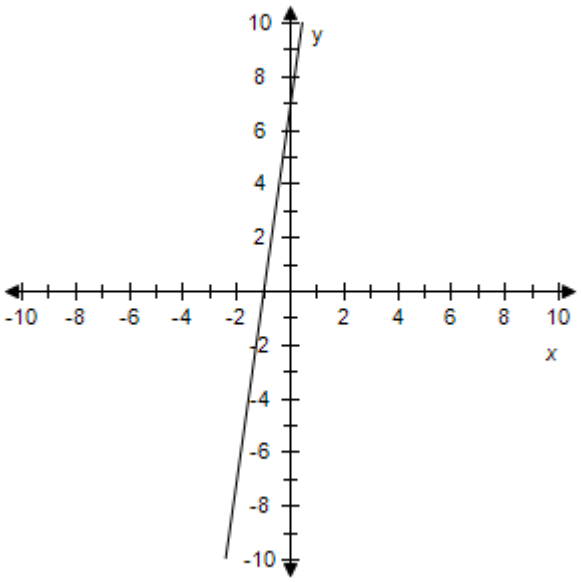
P(0, –7), $m = 8$

a. $y = -8x + 8$

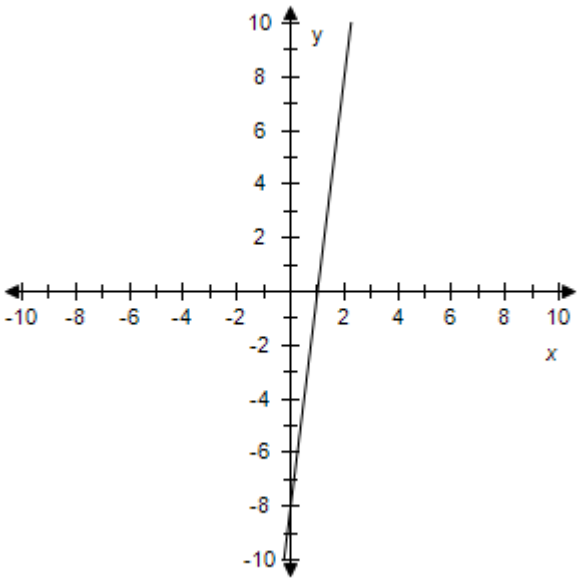
b. $y = -7x - 7$



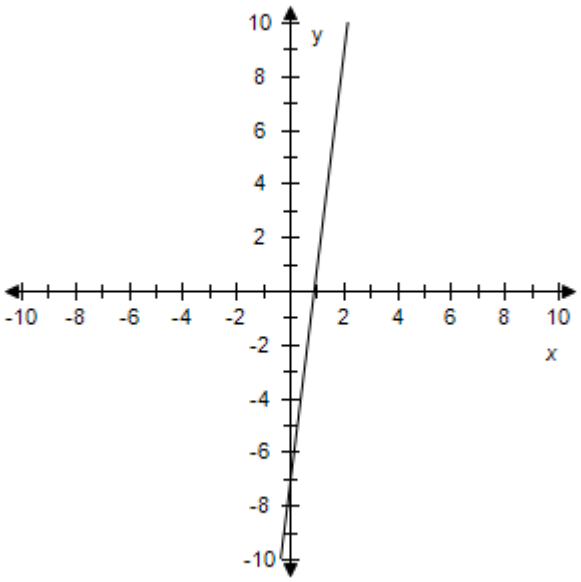
c. $y = 8x - 8$



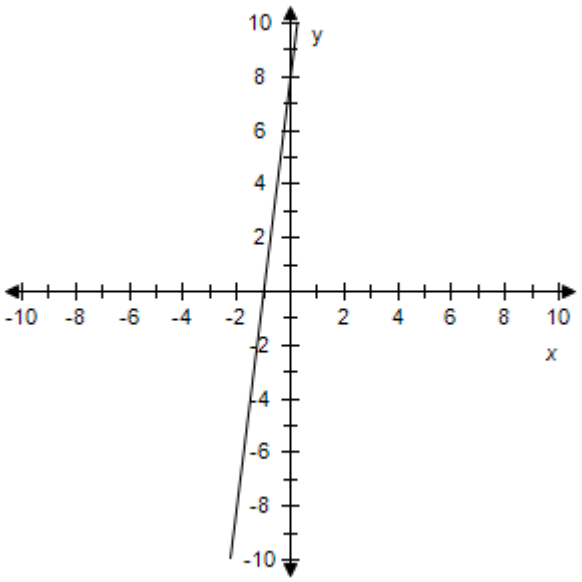
d. $y = 8x - 7$



e. $y = 8x + 8$



Section 1.3 - Linear Equations in Two Variables



ANSWER: d
POINTS: 1
REFERENCES: 2.1.51
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 6:54 AM

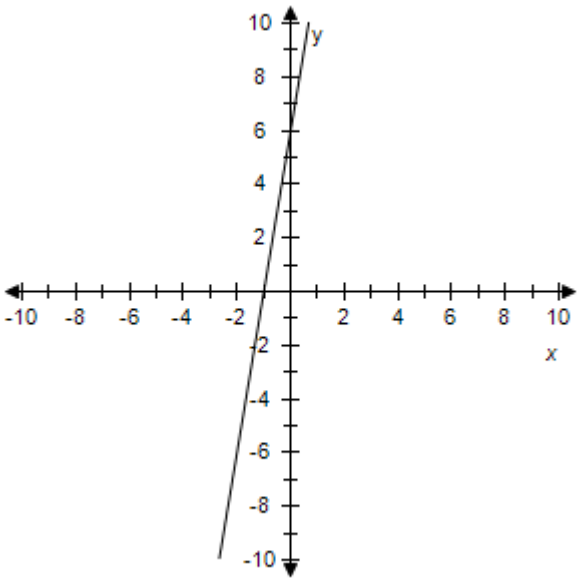
18. Find the slope-intercept form of the equation of the line that passes through the given point and has the indicated slope m. Select correct answer for the line.

$\mathrm{P}(-7, 6), m = -3$

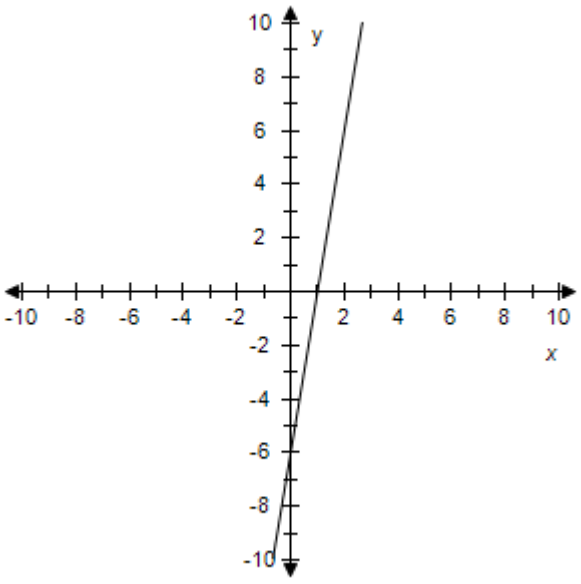
a. $y = 6x + 6$

b. $y = 6x - 6$

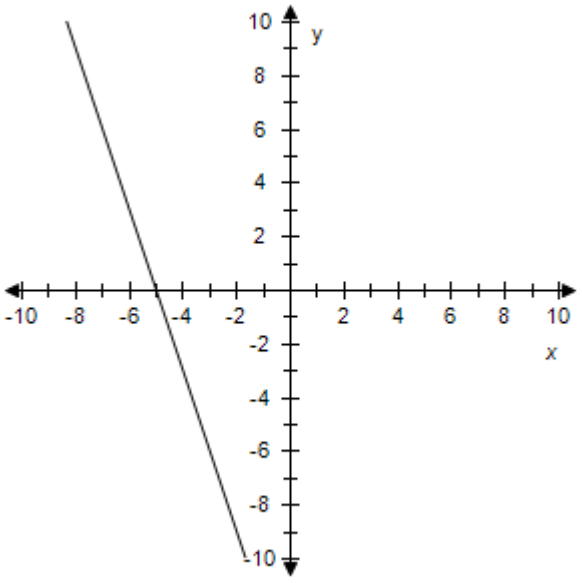
Section 1.3 - Linear Equations in Two Variables



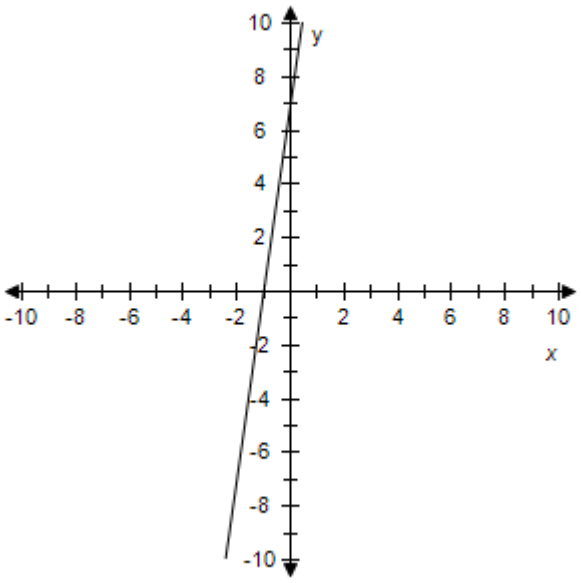
c. $y = -3x - 15$



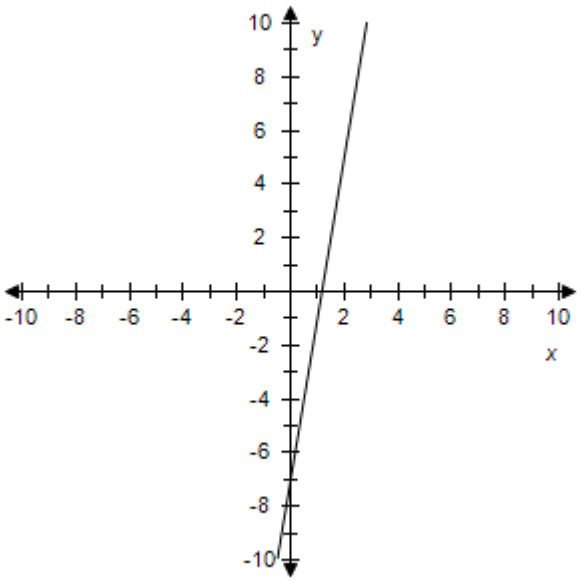
d. $y = -7x - 7$



e. $y = 6x + 6$



Section 1.3 - Linear Equations in Two Variables



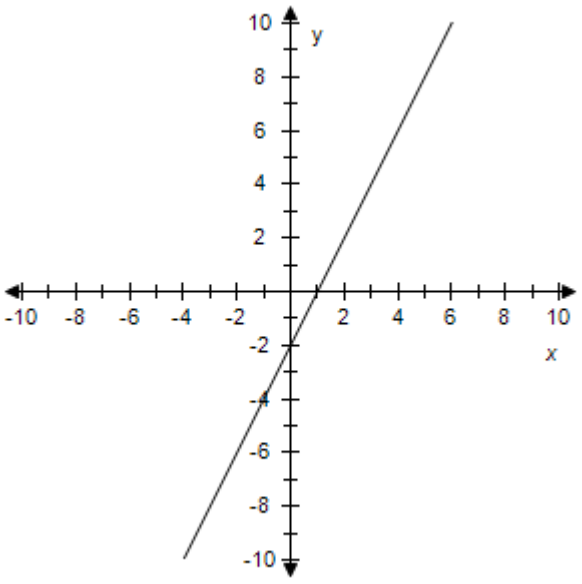
ANSWER: c
POINTS: 1
REFERENCES: 2.1.53
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 6:57 AM

19. Find the slope-intercept form of the equation of the line that passes through the given point and has the indicated slope m. Select correct answer for the line.

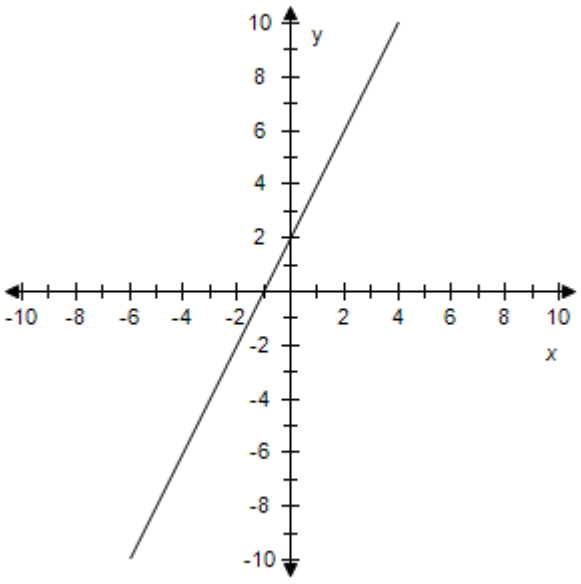
$\mathbf{P}(0, 0), m = 2$

a. $y = 2x - 2$

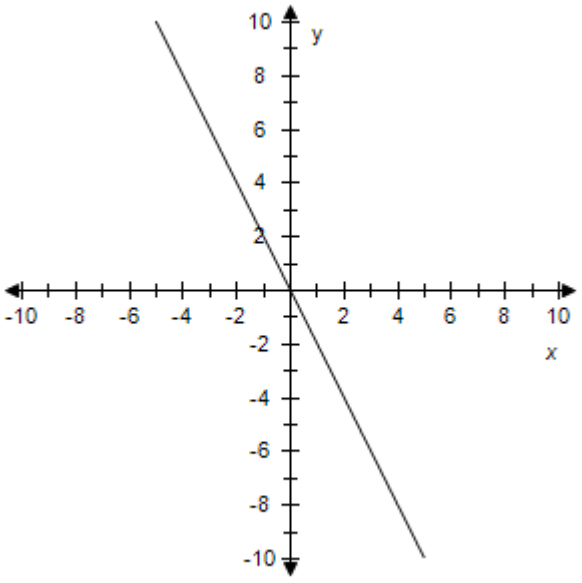
b. $y = 2x + 2$



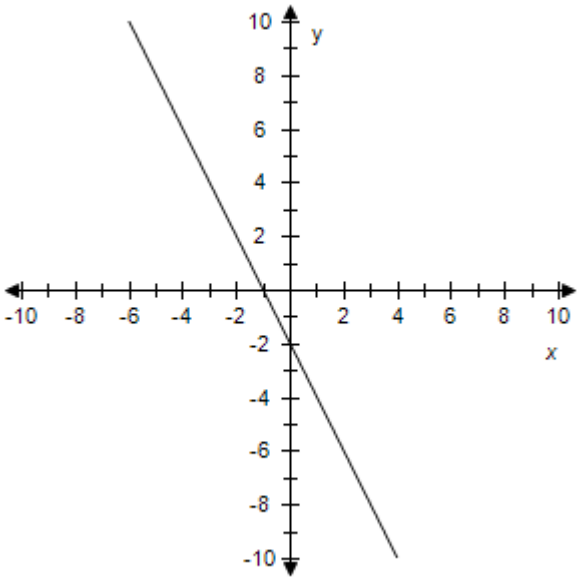
c. $y = -2x$

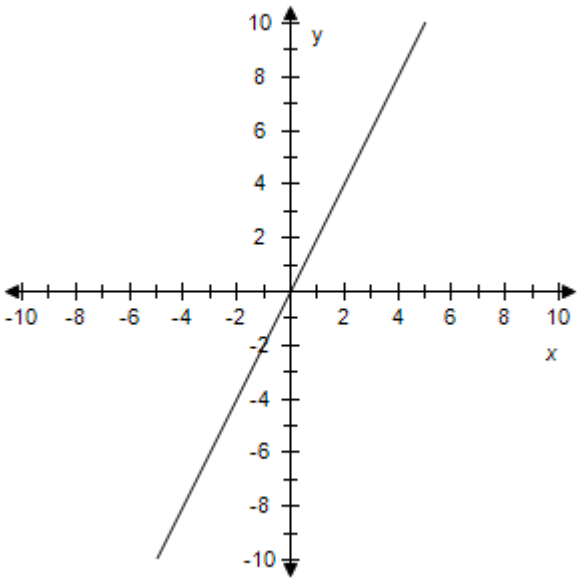


d. $y = -2x - 2$



e. $y = 2x$





ANSWER: e
POINTS: 1
REFERENCES: 2.1.54
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 7:00 AM

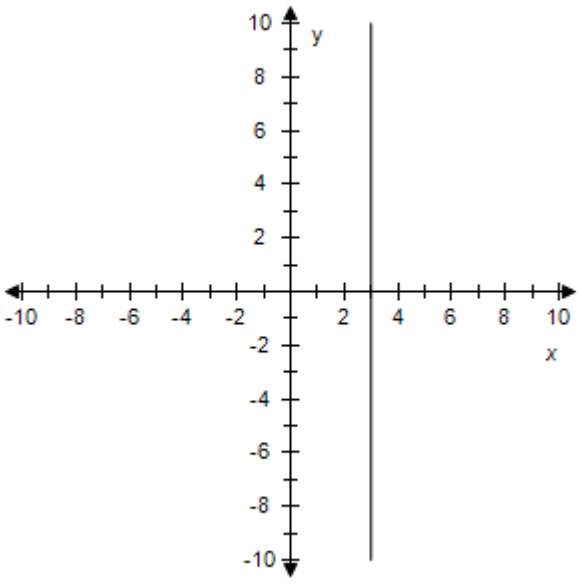
20. Find the slope-intercept form of the equation of the line that passes through the given point and has the indicated slope *m*. Select the correct answer for the line.

P(3, –7), *m* is undefined.

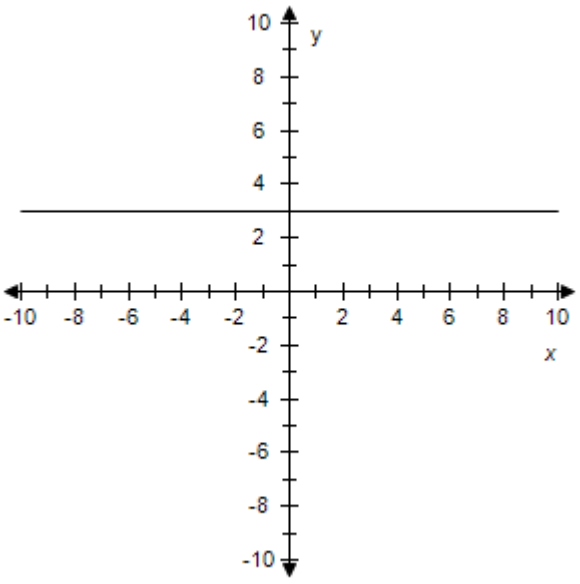
a. $x = 3y - 7$

b. $y = 3$

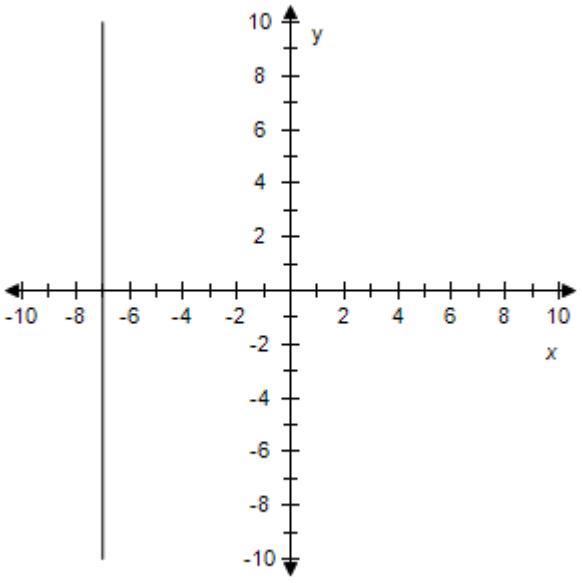
Section 1.3 - Linear Equations in Two Variables



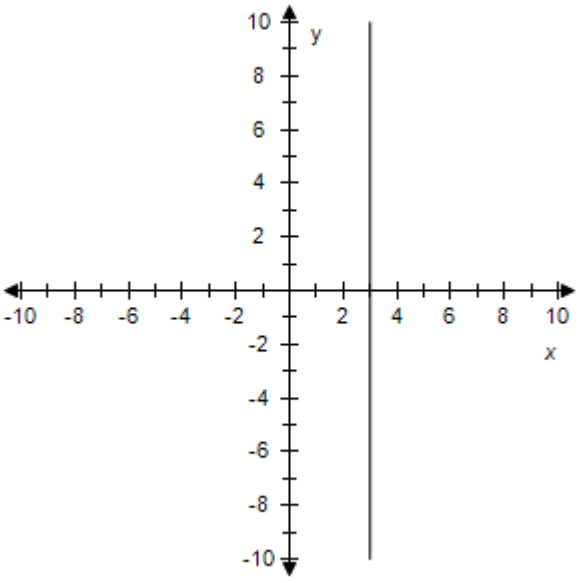
c. $x = -7$



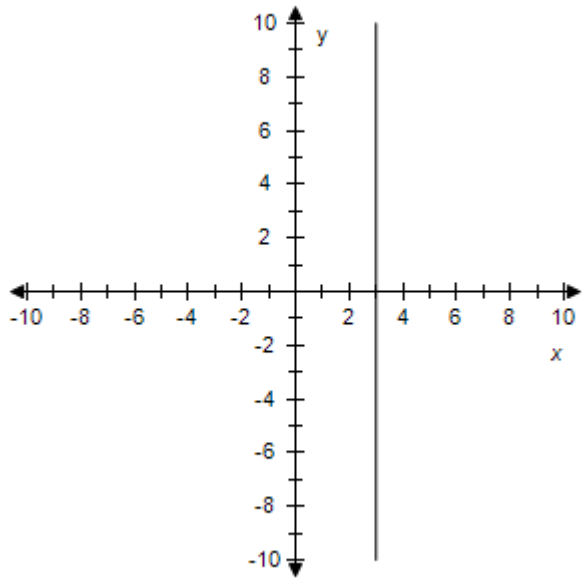
d. $x = 3$



e. $y = 3x - 7$



Section 1.3 - Linear Equations in Two Variables



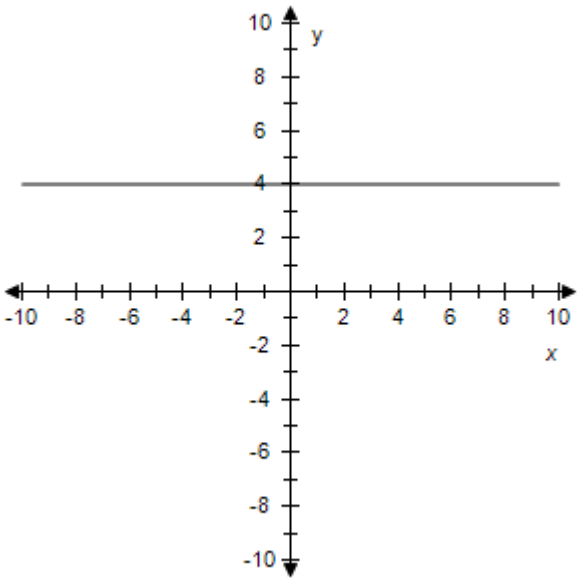
ANSWER: d
POINTS: 1
REFERENCES: 2.1.59
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 7:02 AM

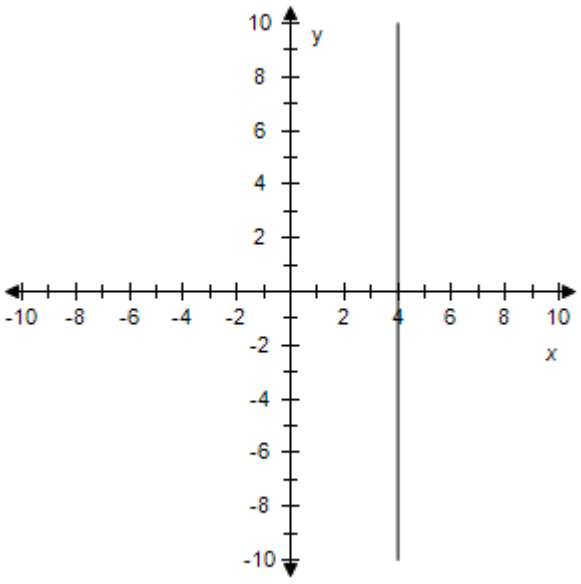
21. Find the slope-intercept form of the equation of the line that passes through the given point and has the indicated slope m. Select correct answer for the line.

P$(4, \frac{8}{7})$, $m = 0$

a. $y = 4$

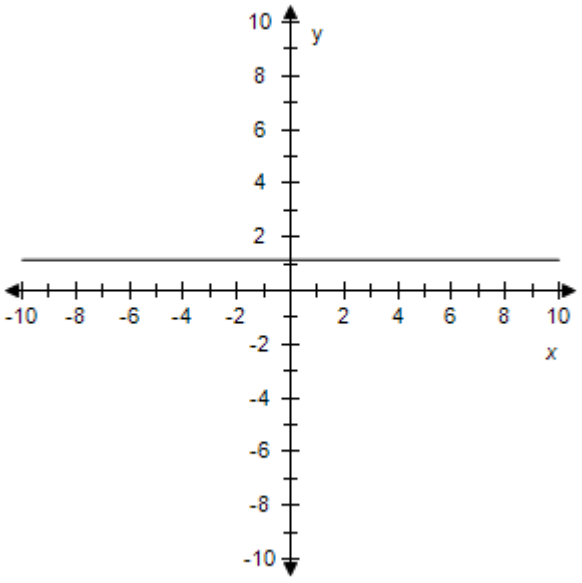
b. $y = 4x + \frac{8}{7}$

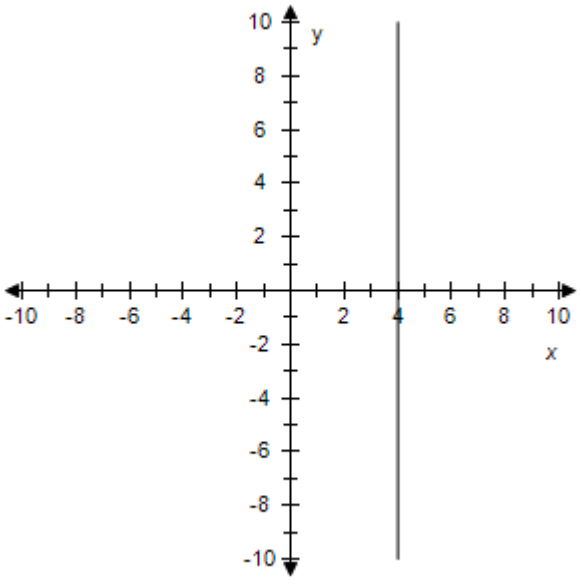




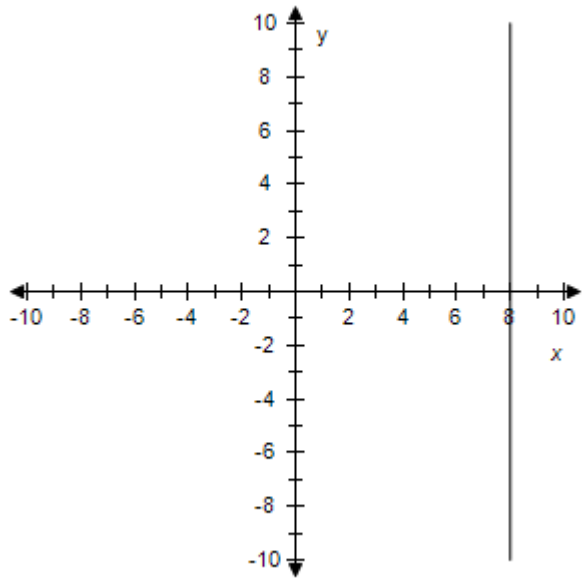
c. $y = \frac{8}{7}$

d. $x = 4y + \frac{8}{7}$





e. $x = 4$



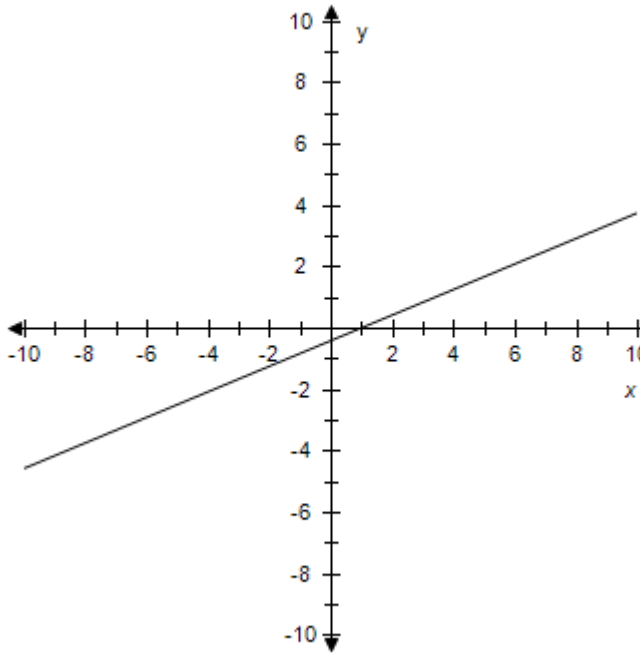
ANSWER: c
POINTS: 1
REFERENCES: 2.1.61
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 7:04 AM

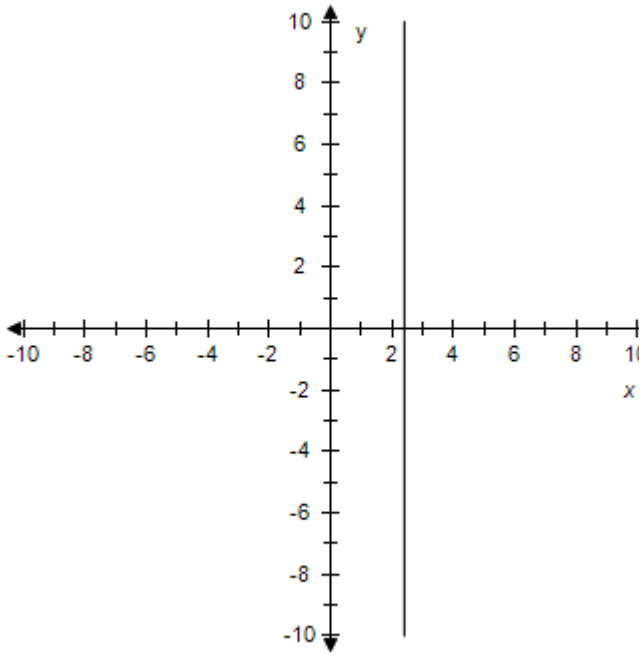
22. Find the slope-intercept form of the equation of the line that passes through the given point and has the indicated slope m. Select correct answer for the line.

P(2.4, –8.7), $m = -4$

a. $x = 2.4y + 0.9$

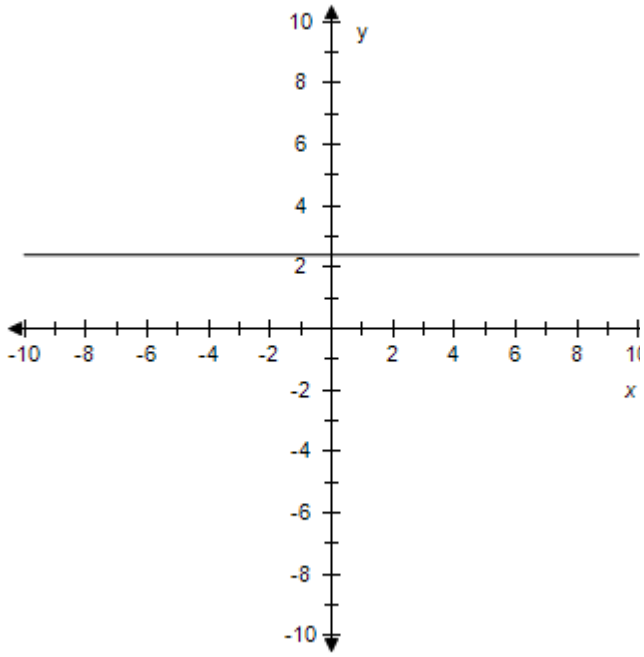
b. $x = 2.4$

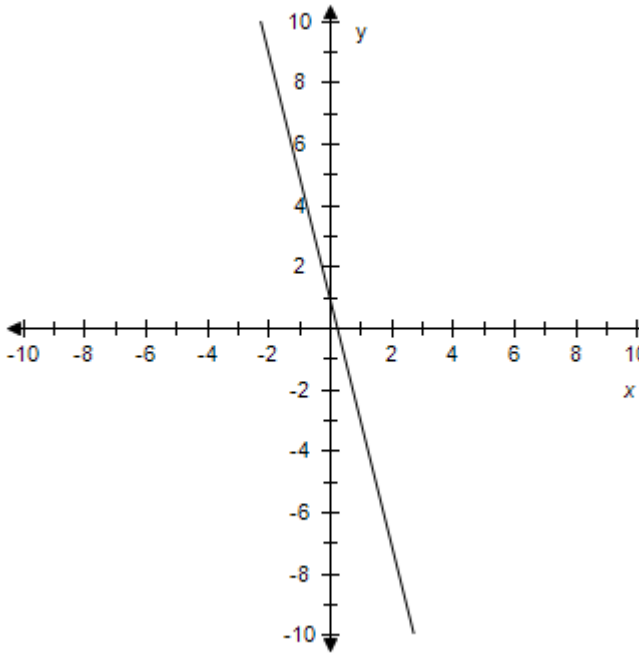




c. $y = 2.4$

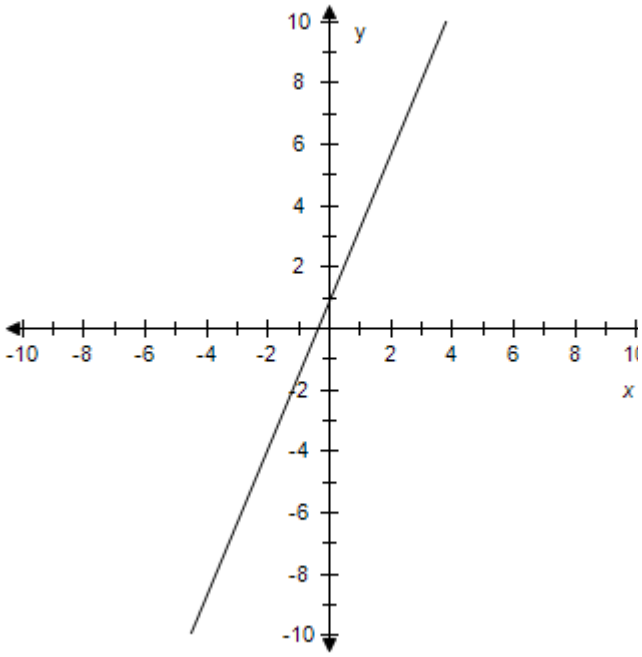
d. $y = -4x + 0.9$





e. $y = 2.4x + 0.9$

Section 1.3 - Linear Equations in Two Variables



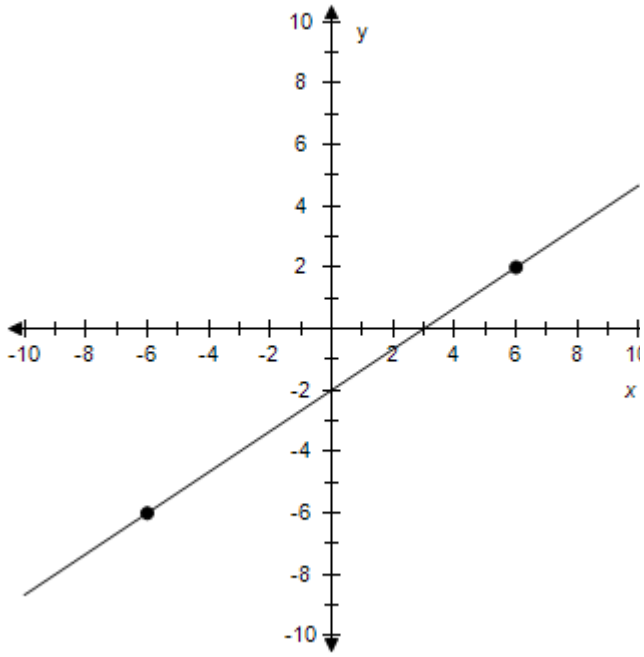
ANSWER: d
POINTS: 1
REFERENCES: 2.1.64
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 7:06 AM

23. Find the slope-intercept form of the equation of the line passing through the points. Select the correct answer for the line.

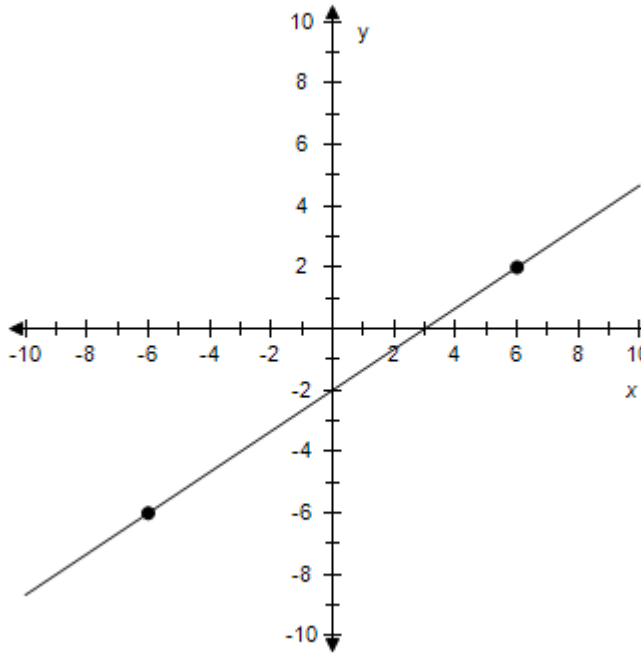
$P(6, -2), Q(-6, 6)$

a. $y = -\frac{2}{3}x - 2$

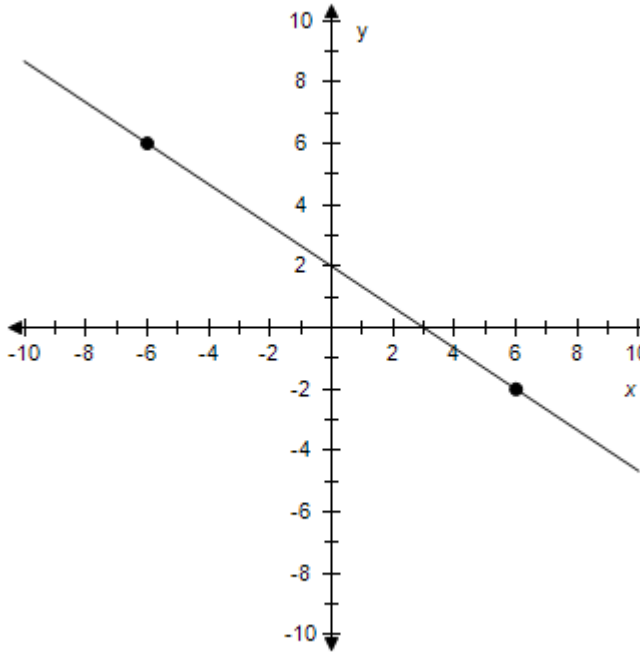
b. $y = -\frac{3}{2}x - 6$



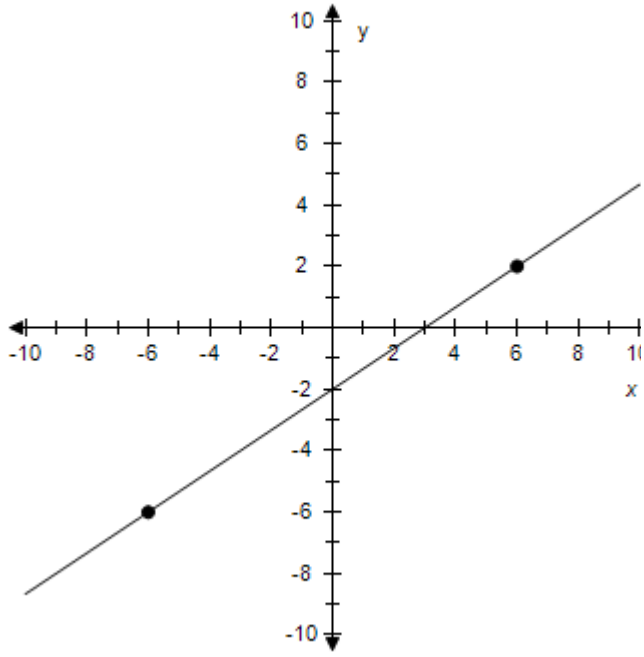
c. $y = -\frac{2}{3}x+2$

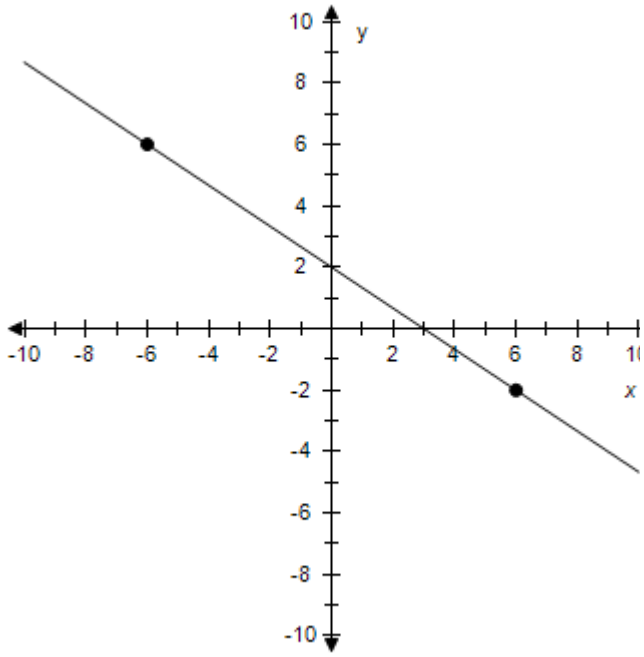


d. $y = -\frac{2}{3}x-4$



e. $y = -\frac{2}{3}x+6$





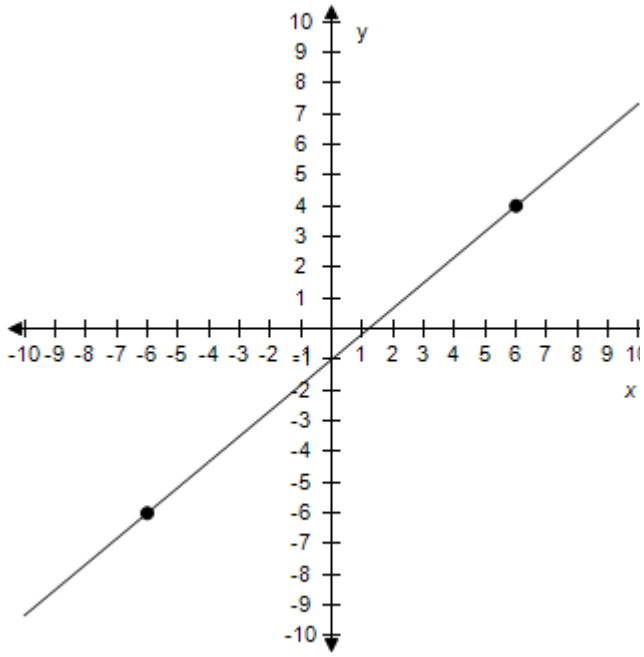
ANSWER: c
POINTS: 1
REFERENCES: 2.1.65
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 7:11 AM

24. Find the slope-intercept form of the equation of the line passing through the points. Select the correct answer for the line.

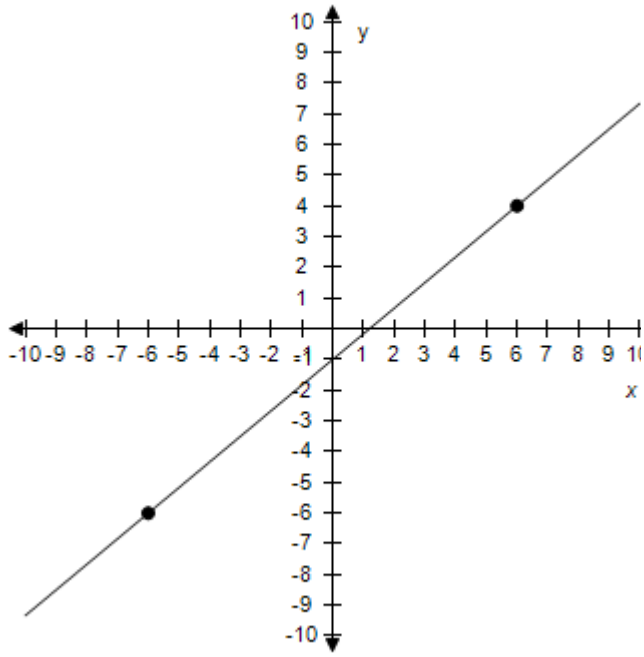
$P(6, 4), Q(-6, -6)$

a. $y = \frac{5}{6}x + 1$

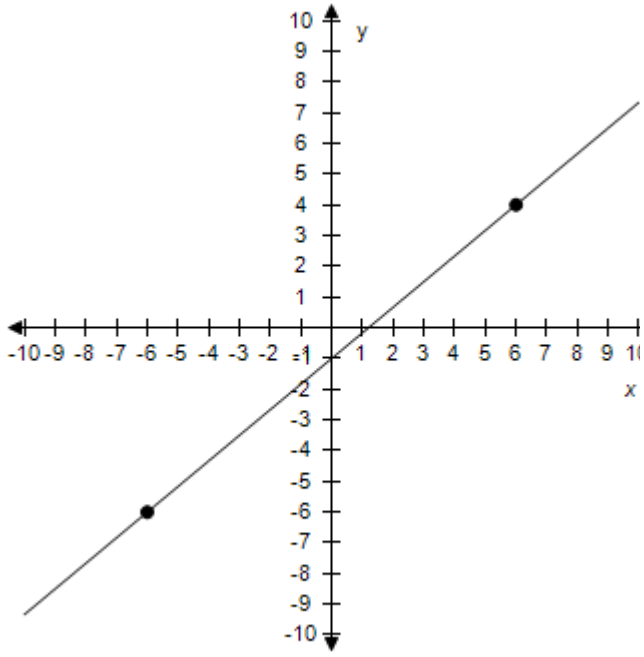
b. $y = \frac{5}{6}x - 6$



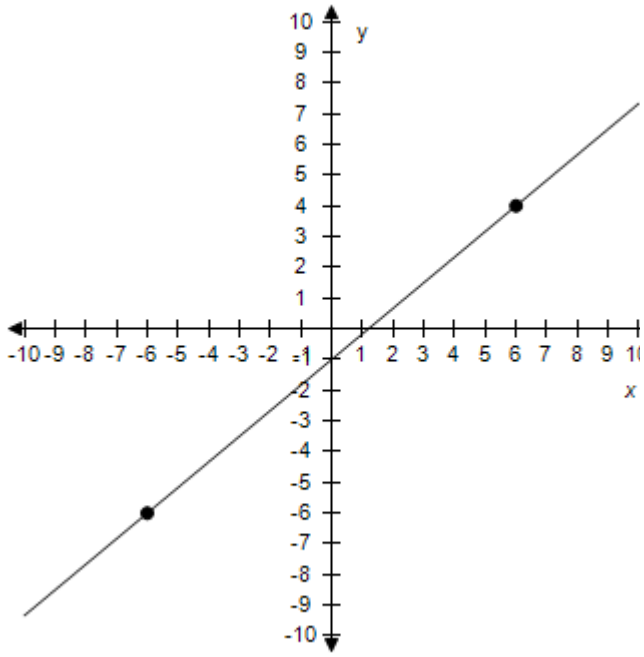
c. $y = \frac{6}{5}x - 2$



d. $y = \frac{5}{6}x - 1$



e. $y = -\frac{5}{6}x - 2$



ANSWER: d
POINTS: 1
REFERENCES: 2.1.66
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 7:14 AM

25. Determine whether the lines are parallel, perpendicular, or neither.

L1: $y = \frac{1}{3}x - 4$

L2: $y = \frac{1}{3}x - 3$

a. Perpendicular
b. Parallel
c. Neither

ANSWER: b
POINTS: 1
REFERENCES: 2.1.79
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/25/2014 5:44 AM

Section 1.3 - Linear Equations in Two Variables

26. Determine whether the lines are parallel, perpendicular, or neither.

L1: $y = \frac{1}{2}x - 4$

L2: $y = -\frac{1}{2}x - 2$

a. Parallel
b. Perpendicular
c. Neither

ANSWER: c
POINTS: 1
REFERENCES: 2.1.81
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/25/2014 6:01 AM

27. Determine whether the lines are parallel, perpendicular, or neither.

L1: $y = \frac{9}{2}x - 9$

L2: $y = -\frac{2}{9}x - 2$

a. Perpendicular
b. Neither
c. Parallel

ANSWER: a
POINTS: 1
REFERENCES: 2.1.82
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/25/2014 6:08 AM

28. Use the *intercept form* to find the equation of the line with the given intercepts. The intercept form of the equation of a line with intercepts $(a, 0)$ and $(0, b)$ is

$$\frac{x}{a} + \frac{y}{b} = 1, a \neq 0, b \neq 0.$$

x-intercept: (3, 0)
y-intercept: (0, 9)

a. $3x + 9y - 27 = 0$
b. $9x + 3y - 27 = 0$
c. $3x + 9y + 27 = 0$

d. $9x + 3y + 27 = 0$

e. $9x - 3y - 27 = 0$

ANSWER: b
POINTS: 1
REFERENCES: 2.1.97
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 11/11/2014 8:03 AM

29. Use the *intercept form* to find the equation of the line with the given intercepts. The intercept form of the equation of a line with intercepts $(a, 0)$ and $(0, b)$ is

$$\frac{x}{a} + \frac{y}{b} = 1, a \neq 0, b \neq 0.$$

x-intercept: $(-3, 0)$
y-intercept: $(0, 8)$

a. $-3x + 8y + 24 = 0$

b. $8x + 3y + 24 = 0$

c. $8x - 3y + 24 = 0$

d. $8x - 3y - 24 = 0$

e. $-3x + 8y - 24 = 0$

ANSWER: c
POINTS: 1
REFERENCES: 2.1.98
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 11/11/2014 8:15 AM

30. Use the *intercept form* to find the equation of the line with the given intercepts. The intercept form of the equation of a line with intercepts $(a, 0)$ and $(0, b)$ is

$$\frac{x}{a} + \frac{y}{b} = 1, a \neq 0, b \neq 0.$$

x-intercept: $\left(-\frac{1}{6}, 0\right)$

y-intercept: $\left(0, -\frac{2}{7}\right)$

a. $12x - 7y + 2 = 0$
b. $-12x + 7y + 2 = 0$
c. $12x + 7y + 2 = 0$
d. $-7x - 12y - 2 = 0$
e. $12x + 7y - 2 = 0$

ANSWER: c
POINTS: 1
REFERENCES: 2.1.99
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 7:17 AM

31. Use the *intercept form* to find the equation of the line with the given intercepts. The intercept form of the equation of a line with intercepts $(a, 0)$ and $(0, b)$ is

$$\frac{x}{a} + \frac{y}{b} = 1, a \neq 0, b \neq 0.$$

x-intercept: $(-\frac{5}{8}, 0)$
y-intercept: $(0, -3)$

a. $-24x - 8y - 5 = 0$
b. $24x + 8y - 5 = 0$
c. $-24x + 8y + 5 = 0$
d. $24x + 5y + 15 = 0$
e. $24x - 8y + 5 = 0$

ANSWER: d
POINTS: 1
REFERENCES: 2.1.100
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 8:59 AM

32. Use the *intercept form* to find the equation of the line with the given intercepts. The intercept form of the equation of a line with intercepts $(a, 0)$ and $(0, b)$ is

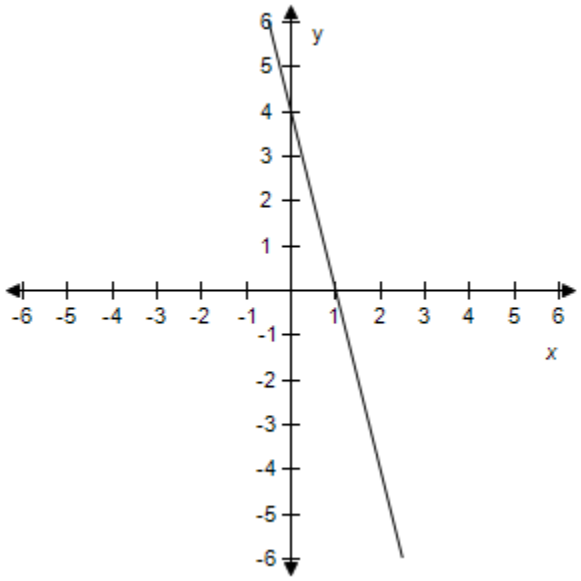
$$\frac{x}{a} + \frac{y}{b} = 1, a \neq 0, b \neq 0.$$

Point on line: (4, 6)
x-intercept: $(c, 0)$
y-intercept: $(0, c)$, $c \neq 0$

a. $x + y + 10 = 0$
b. $x + y - 10 = 0$
c. $-x + y - 10 = 0$
d. $x - y - 10 = 0$
e. $-x - y - 10 = 0$

ANSWER: b
POINTS: 1
REFERENCES: 2.1.101
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 7:19 AM

33. Estimate the slope of the line.



a. –2
b. –3
c. –4
d. –1
e. Undefined

ANSWER: c
POINTS: 1
REFERENCES: 2.1.15
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True

Section 1.3 - Linear Equations in Two Variables

DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 7:20 AM

34. The following is the slope of line representing annual sale y in term of time x in year. Use the slope to interpret any change in annual sales for a one-year increase in time.

The line has a slope of $m = 134$.

a. No change in sales
b. Sales decreasing 134 units/yr
c. Sales increasing 134 units/yr
d. None of the above

ANSWER: c
POINTS: 1
REFERENCES: 2.1.111a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/25/2014 11:47 PM

35. The following is the slope of line representing annual sale y in term of time x in year. Use the slope to interpret any change in annual sales for a one-year increase in time.

The line has a slope of $m = -20$.

a. Sales increasing 20 units/yr
b. Sales decreasing 20 units/yr
c. No change in sales
d. None of the above

ANSWER: b
POINTS: 1
REFERENCES: 2.1.111c
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 7:20 AM

36. The following is the slope of line representing daily revenue y in term of time x in day. Use the slope to interpret any change in daily revenues for a one-day increase in time.

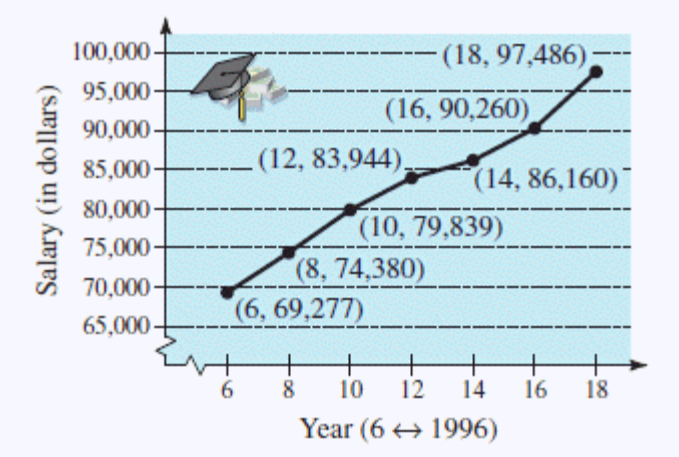
The line has a slope of $m = 500$.

a. Revenues increasing 500 units/day
b. No change in revenues
c. Revenues decreasing 500 units/day
d. None of the above

Section 1.3 - Linear Equations in Two Variables

ANSWER: a
POINTS: 1
REFERENCES: 2.1.112a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/25/2014 11:49 PM

37. The graph shows the average salaries for senior high school principals from 1996 through 2008.

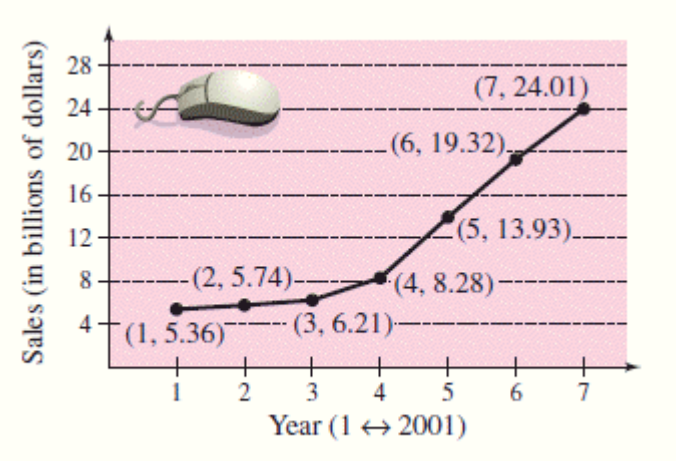


Find the slope of the line segment connecting the points for the years 1998 and 2002.

a. –2394
b. 2391
c. –2391
d. 2396
e. 2392

ANSWER: b
POINTS: 1
REFERENCES: 2.1.113b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 11/11/2014 11:38 PM

38. The graph shows the sales (in billions of dollars) for Apple Inc. for the years 2001 through 2007.



Find the slope of the line segment connecting the points for the years 2003 and 2004. Round the answer to two decimal places.

a. –5.07
b. 2.07
c. 7.07
d. 3.07
e. –2.07

ANSWER: b
POINTS: 1
REFERENCES: 2.1.114b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 8:04 AM

39. You are driving on a road that has a 5% uphill grade. This means that the slope of the road is $\frac{5}{100}$.

Approximate the amount of vertical change in your position if you drive 400 feet.

a. 18 ft
b. 21 ft
c. 22 ft
d. 19 ft
e. 20 ft

ANSWER: e
POINTS: 1
REFERENCES: 2.1.115
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 7:21 AM

40. A sub shop purchases a used pizza oven for $885. After 5 years, the oven will have to be replaced. Select the linear equation giving the value V of the equipment during the 5 years it will be in use.

a. $V = -177 + 885t$
b. $V = -177t - 885$
c. $V = 177t - 885$
d. $V = 177t + 885$
e. $V = -177t + 885$

ANSWER: e
POINTS: 1
REFERENCES: 2.1.121
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 7:22 AM

41. A school district purchases a high-volume printer, copier, and scanner for $20,000.
After 10 years, the equipment will have to be replaced. Its value at that time is expected to be $2,600. Select a linear equation giving the value of the equipment during the 10 years it will be in use.

a. $V = 1740t - 20{,}000$
b. $V = -1740t - 20{,}000$
c. $V = 1740t + 20{,}000$
d. $V = -1740t + 20{,}000$
e. $V = -1740 + 20{,}000t$

ANSWER: d
POINTS: 1
REFERENCES: 2.1.122
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 11/12/2014 12:09 AM

42. A discount outlet is offering a 70% discount on all items. Select a linear equation giving the sale price S for an item with a list price L.

a. $L = 0.3S$
b. $L = 0.7S$
c. $S = 0.7L$
d. $S = 70L$
e. $S = 0.3L$

ANSWER: e

POINTS: 1
REFERENCES: 2.1.123
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 11/12/2014 12:12 AM

43. A microchip manufacturer pays its assembly line workers \$12.25 per hour. In addition, workers receive a piecework rate of \$0.3 per unit produced. Select a linear equation for the hourly wage W in terms of the number of units x produced per hour.

a. $W = 0.3x + 12.25$
b. $W = 0.3x - 12.25$
c. $W = 12.25x + 0.3$
d. $W = 12.25x - 0.3$
e. $W = 12.55x$

ANSWER: a
POINTS: 1
REFERENCES: 2.1.124
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 7:23 AM

44. A pharmaceutical salesperson receives a monthly salary of \$2600 plus a commission of 2% of sales. Select a linear equation for the sales-person's monthly wage W in terms of monthly sales S.

a. $W = -0.02S + 2600$
b. $W = -0.02S - 2600$
c. $W = 0.02S + 2600$
d. $S = 0.02W - 2600$
e. $S = 0.02W + 2600$

ANSWER: c
POINTS: 1
REFERENCES: 2.1.125
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/26/2014 1:30 AM

45. A sales representative of a company using a personal car receives \$160 per day for lodging and meals plus \$0.53 per mile driven. Select a linear equation giving the daily cost C to the company in terms of x, the number of miles driven.

a. $C = 0.53 + 160x$

b. $C = 0.53x + 160$
c. $C = -0.53x - 160$
d. $C = 0.53x - 160$
e. $C = -0.53x + 160$

ANSWER: b
POINTS: 1
REFERENCES: 2.1.126
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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46. A real estate office handles an apartment complex with 60 units. When the rent per unit is $98 per month, all 60 units are occupied. However, when the rent is $630 per month, the average number of occupied units drops to 46. Assume that the relationship between the monthly rent p and the demand x is linear.
Select the equation of the line giving the demand x in terms of the rent p.

a. $x = 532p + 62.58$
b. $x = -38p - 62.58$
c. $x = -\frac{1}{38}p + 62.58$
d. $x = -38p + 62.58$
e. $x = 14p + 62.58$

ANSWER: c
POINTS: 1
REFERENCES: 2.1.132a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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47. The length and width of a rectangular garden are 16 meters and 11 meters, respectively. A walkway of width x surrounds the garden.
Write the equation for the perimeter y of the walkway in terms of x.

a. $y = 8x + 54$
b. $y = 8x - 54$
c. $y = 8x + 27$
d. $y = 4x + 54$
e. $y = 4x + 27$

ANSWER: a
POINTS: 1
REFERENCES: 2.1.133b
QUESTION TYPE: Multi-Mode (Multiple choice)

Section 1.3 - Linear Equations in Two Variables

HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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48. Determine whether the statement is true or false. Justify your answer.

A line with a slope of $-\frac{5}{7}$ is steeper than a line with a slope of $-\frac{6}{7}$.

a. True. The slope with the smallest magnitude corresponds to the steepest line.
b. False. The slope with the greatest magnitude corresponds to the steepest line.

ANSWER: b
POINTS: 1
REFERENCES: 2.1.137
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/26/2014 1:53 AM

49. Write the slope-intercept form of the equation of the line through the given point perpendicular to the given line.

point: (–4, 9) line: $6x - 30y = 6$

a. $y = -\frac{1}{6}x + \frac{1}{3}$
b. $y = -5x - \frac{4}{5}$
c. $y = -5x - 11$
d. $y = 6x - 15$
e. $y = \frac{1}{5}x + \frac{4}{5}$

ANSWER: c
POINTS: 1
REFERENCES: 2.1.87
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 7:25 AM

50. Carl's Tractor Service purchases a used brush mower for $1445. The machine has a useful life of 5 years after which time another one will have to be purchased. Assume depreciation of the machine is linear. Write a linear equation giving the value V of the used brush mower during the 5 years it will be in use.

a. $V = -\frac{1}{289}t - 1445$

b. $V = 289t - 1445$

c. $V = -\frac{1}{289}t + 5$

d. $V = \frac{1}{289}t + 5$

e. $V = -289t + 1445$

ANSWER: e
POINTS: 1
REFERENCES: 2.1.121
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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51. Find the slope of the line passing through the pair of points.

P(–4, 3); Q(2, –9).

a. $m = 1$
b. $m = -7$
c. $m = 4$
d. $m = -2$
e. $m = -1$

ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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52. Find the slope of the line passing through the pair of points.

P(5, 4); Q(9, 20).

a. $m = 5$
b. $m = 4$
c. $m = 2$
d. $m = 3$
e. $m = 6$

ANSWER: b
POINTS: 1

Section 1.3 - Linear Equations in Two Variables

QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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53. Find the slope of the line passing through the pair of points.

P (–9, 14); Q (–18, –2)

a. $m = \frac{16}{9}$
b. $m = -\frac{9}{16}$
c. $m = -\frac{16}{9}$
d. $m = \frac{9}{16}$
e. none of these

ANSWER: a
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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54. Find the slope of the line passing through the pair of points.

$P(19, \sqrt{2})$; $Q(\sqrt{2}, 19)$

a. $m = 19$
b. $m = 1$
c. $m = 2$
d. $m = -1$
e. none of these

ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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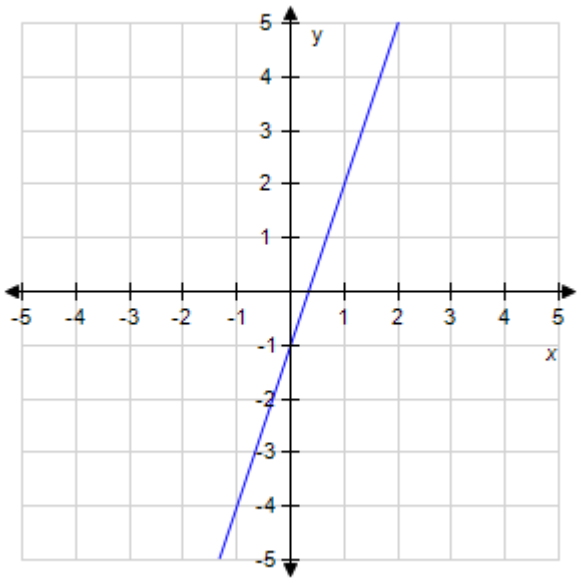
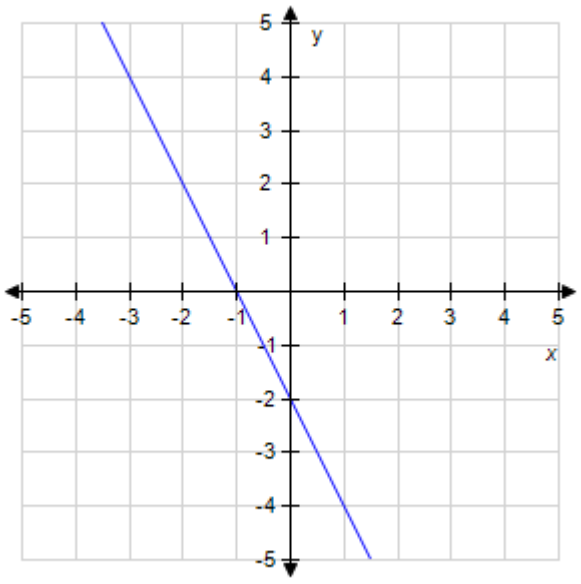
55. Draw the line using the slope and y-intercept.

$y + 1 = 2x$

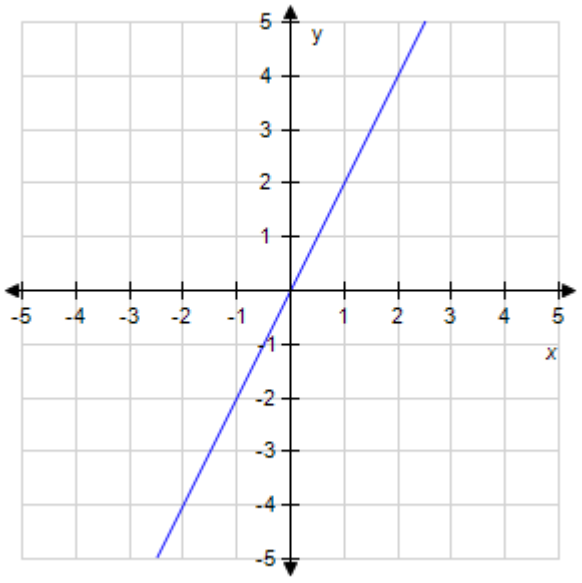
a.



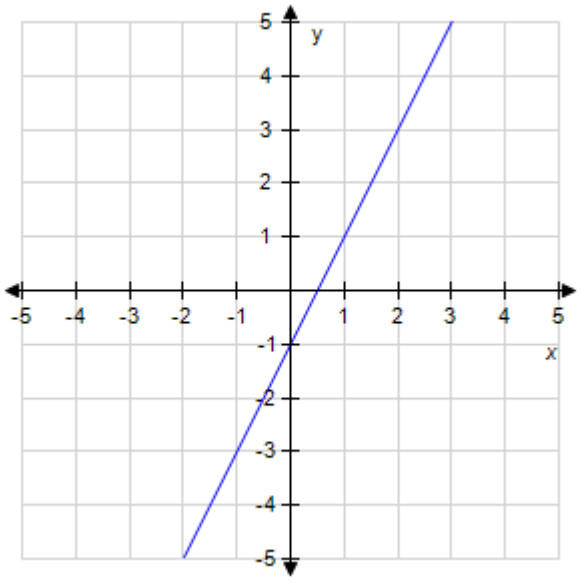
b.



c.



d.



ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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56. Find the slope of the line.

$y = 9x + 25$

a. $m = -9$
b. $m = 10$
c. $m = 13$
d. $m = 9$
e. $m = 6$

ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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57. Find the y-intercept of the line determined by the equation.

$-7x + 4y = 3$

a. $\left(0, \frac{7}{4}\right)$
b. $\left(0, \frac{3}{4}\right)$
c. $\left(0, -\frac{3}{4}\right)$
d. $\left(-\frac{7}{4}, 0\right)$
e. $\left(0, -\frac{7}{4}\right)$

ANSWER: b
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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58. Find the slope of the line determined by the equation.

$9x + 10y = 11$

a. $m = -9$
b. $m = 9$
c. $m = -\frac{9}{10}$

d. $m = \frac{11}{10}$

e. $m = -10$

ANSWER: c
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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59. Write the equation of the line that passes through the point P(0, 0) and is parallel to the line $y = 8x - 7$.

a. $x = 8y$
b. $y = 7x + 8$
c. $y = -7x$
d. $y = 8x$
e. $y = 7x$

ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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60. Write the equation of the line that passes through the point P (0, 0) and is perpendicular to the line $y = -2x + 10$.

a. $y = \frac{1}{2}x$

b. $y = -\frac{1}{10}x$

c. $y = -10x$

d. $y = 2x$

e. $y = -\frac{1}{2}x + 10$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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61. Write the equation of the line that passes through the point P(4, 3) and is perpendicular to the line $y = -5x +$

Section 1.3 - Linear Equations in Two Variables

2.

a. $y = \frac{1}{5}x + 2$

b. $y = \frac{1}{5}x + 3.8$

c. $y = \frac{1}{5}x + 2.2$

d. $y = 2.2x + \frac{1}{5}$

e. $y = x + 2.2$

ANSWER: c
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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62. Find the slope of the line through $P(-8, -5)$ and $Q(2, 35)$.
ANSWER: 4
POINTS: 1
QUESTION TYPE: Numeric Response
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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63. A line passes through the two points $P(3, 3)$,and $Q(-5, -5)$. Write the equation in slope-intercept form.
ANSWER: $y = x$
POINTS: 1
QUESTION TYPE: Subjective Short Answer
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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64. Write the equation of the line that passes through the point P (0, 0), and is parallel to the line $y = 8x - 1$.

Write the answer in slope-intercept form.
ANSWER: $y = 8 \cdot x$
POINTS: 1
QUESTION TYPE: Subjective Short Answer
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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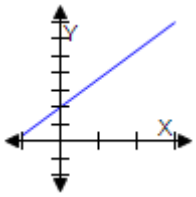
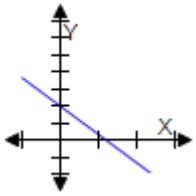
Section 1.3 - Linear Equations in Two Variables

Tell whether the slope of the line is positive, negative, 0, or undefined.
Choose the correct letter for each question.

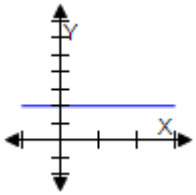
a.



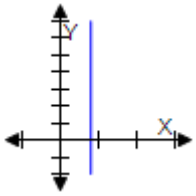
b.



c.



d.



QUESTION TYPE: Matching
HAS VARIABLES: True
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65. undefined slope
ANSWER: d
POINTS: 1

66. negative slope
ANSWER: b
POINTS: 1

67. zero slope
ANSWER: c
POINTS: 1

68. positive slope
ANSWER: a
POINTS: 1

Determine whether the line through the given points and the line through R (8,7) and S(5,14) are parallel, perpendicular, or neither.

Section 1.3 - Linear Equations in Two Variables

Choose the correct letter for each question.

a. $P(16, 14)$; $Q(10, 28)$

b. $P(21, -24)$; $Q(42, -15)$

c. $P(14, 14)$; $Q(0, -10)$

QUESTION TYPE: Matching
HAS VARIABLES: False
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69. perpendicular
ANSWER: b
POINTS: 1

70. neither
ANSWER: c
POINTS: 1

71. parallel
ANSWER: a
POINTS: 1

Section 1.4 - Functions

1. Which set of ordered pairs represents a function from A to B?

$A = \{3, 2, 4, 1\}$ and $B = \{-4, -5, 3, 2, 4\}$

a. $\{(3, -4), (2, -5), (4, -4), (3, -5)\}$
b. $\{(3, -4), (4, 4), (2, -5), (1, 3), (2, 2)\}$
c. $\{(3, 4), (1, 3), (2, 2)\}$
d. $\{(3, 2), (2, -4), (4, 3), (1, 4)\}$
e. $\{(3, -4), (2, 2), (1, 3)\}$

ANSWER: d
POINTS: 1
REFERENCES: 2.2.15
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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2. Which set of ordered pairs represents a function from A to B?

$A = \{a, b, c\}$ and $B = \{4, 3, 1, 2\}$

a. $\{(a, 4), (b, 3)\}$
b. $\{(a, 2), (c, 3), (b,4)\}$
c. $\{(a, 4), (c, 1)\}$
d. $\{(a, 1), (c, 3), (c, 1), (b, 4)\}$
e. $\{(a, 4), (c, 3), (c, 1), (b, 1)\}$

ANSWER: b
POINTS: 1
REFERENCES: 2.2.16
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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3. Which of the following equation represents y as a function of x?

a. $y^2 = 9 - x$
b. $y^3 = x + 9$
c. $y^2 = x + 9$
d. $x^2 + y = 9$
e. $x2 + y^2 = 9$

ANSWER: d
POINTS: 1
REFERENCES: 2.2.21

Section 1.4 - Functions

QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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4. Which of the following equation does not represent y as a function of x?

a. $y^2 = 1 - x$
b. $y = x^2 + 1$
c. $x^2 + y = 1$
d. $y = x^2 + x - 1$
e. $y = x^2 - 1$

ANSWER: a
POINTS: 1
REFERENCES: 2.2.27
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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5. Evaluate $f(7)$ if $f(x) = 4x - 1$.

a. $f(7) = 27$
b. $f(7) = 26$
c. $f(7) = 29$
d. $f(7) = 25$
e. $f(7) = 28$

ANSWER: a
POINTS: 1
REFERENCES: 2.2.37a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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6. Evaluate $f(-7)$ if $f(x) = 12x - 8$.

a. $f(-7) = -89$
b. $f(-7) = -91$
c. $f(-7) = -88$
d. $f(-7) = -92$
e. $f(-7) = -90$

ANSWER: d

POINTS: 1
REFERENCES: 2.2.37b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/14/2015 4:40 AM

7. Evaluate $g(s + 2)$ if $g(y) = 12 – 5y$.

a. $g(s + 2) = –2 + 5s$
b. $g(s + 2) = –2 – 5s$
c. $g(s + 2) = 2 + 5s$
d. $g(s + 2) = 2 – 5s$
e. $g(s + 2) = 12 – 5s$

ANSWER: d
POINTS: 1
REFERENCES: 2.2.38c
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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8. Evaluate $S(3)$ if $S(r) = 4\pi r^2$.

a. $S(3) = 40\pi$
b. $S(3) = 9\pi$
c. $S(3) = 38\pi$
d. $S(3) = 36\pi$
e. $S(3) = 37\pi$

ANSWER: d
POINTS: 1
REFERENCES: 2.2.40a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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9. Evaluate $g(t) – g(9)$ if $g(t) = 12t^2 – 6t + 3$.

a. $g(t) – g(9) = 12t^2 – 918 + 6t$
b. $g(t) – g(9) = 6t^2 – 918t + 12$
c. $g(t) – g(9) = 12t^2 – 918t – 6$
d. $g(t) – g(9) = 6t^2 + 12t – 918$

e. $g(t) - g(9) = 12t^2 - 6t - 918$

ANSWER: e
POINTS: 1
REFERENCES: 2.2.41c
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/24/2014 5:53 AM

10. Evaluate $f(16)$ if $f(x) = \sqrt{x + 9} + 1$.

a. $f(16) = 5$
b. $f(16) = 7$
c. $f(16) = 4$
d. $f(16) = 8$
e. $f(16) = 6$

ANSWER: e
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/24/2014 6:00 AM
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11. Evaluate $f(11)$ if $f(x) = \dfrac{|x|}{x}$.

a. $f(11) = -1$
b. $f(11) = 2$
c. $f(11) = 0$
d. $f(11) = 1$
e. $f(11) = 3$

ANSWER: d
POINTS: 1
REFERENCES: 2.2.47b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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12. Evaluate $q(4)$ if $q(x) = \dfrac{1}{(x^2 - 7)}$.

a. $q(4) = \dfrac{1}{13}$

b. $q(4) = \frac{1}{11}$

c. $q(4) = \frac{1}{9}$

d. $q(4) = \frac{1}{12}$

e. $q(4) = \frac{1}{10}$

ANSWER: c
POINTS: 1
REFERENCES: 2.2.45a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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13. Evaluate $f(0)$ if $f(x) = \begin{cases} 9x + 6, & x < 0 \\ 9x + 9, & x \geq 0 \end{cases}$.

a. $f(0) = -9$
b. $f(0) = 6$
c. $f(0) = 9$
d. $f(0) = -6$
e. $f(0) = 0$

ANSWER: c
POINTS: 1
REFERENCES: 2.2.49b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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14. Evaluate $f(-4)$ if $f(x) = \begin{cases} x^2 + 5, & x < 1 \\ 5x^2 + 5, & x \geq 1 \end{cases}$.

a. $f(-4) = 19$
b. $f(-4) = 11$
c. $f(-4) = 16$
d. $f(-4) = 23$
e. $f(-4) = 21$

ANSWER: e
POINTS: 1
REFERENCES: 2.2.50a
QUESTION TYPE: Multi-Mode (Multiple choice)

Section 1.4 - Functions

HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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15. Evaluate the function $f(x) = \begin{cases} 4x - 2, & x < -1 \\ 7, & -1 \le x \le 1 \\ x^2, & x > 1 \end{cases}$ at $f\left(-\frac{1}{2}\right)$.

a. $f\left(-\frac{1}{2}\right) = -10$

b. $f\left(-\frac{1}{2}\right) = 10$

c. $f\left(-\frac{1}{2}\right) = -7$

d. $f\left(-\frac{1}{2}\right) = -4$

e. $f\left(-\frac{1}{2}\right) = 7$

ANSWER: e
POINTS: 1
REFERENCES: 2.2.51b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/24/2014 6:56 AM

16. Evaluate the function $f(x) = \begin{cases} 9 - 2x, & x < -2 \\ 0, & -2 \le x \le 2 \\ x^2 + 8, & x > 2 \end{cases}$ at $f(7)$.

a. $f(7) = 61$
b. $f(7) = 58$
c. $f(7) = 57$
d. $f(7) = 59$
e. $f(7) = 60$

ANSWER: c
POINTS: 1
REFERENCES: 2.2.52b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True

Section 1.4 - Functions

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17. Complete the table.

$f(x) = x^2 - 3$

x	–3	–1	0	4	5
$f(x)$					

a.

x	–3	–1	0	4	5
$f(x)$	6	–2	13	–3	22

b.

x	–3	–1	0	4	5
$f(x)$	6	–2	–3	22	13

c.

x	–3	–1	0	4	5
$f(x)$	–2	6	–3	13	22

d.

x	–3	–1	0	4	5
$f(x)$	6	–2	0	13	22

e.

x	–3	–1	0	4	5
$f(x)$	6	–2	–3	13	22

ANSWER: e
POINTS: 1
REFERENCES: 2.2.53
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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18. Complete the table.

$h(t) = \frac{1}{2}|t + 3|$

t	–11	–9	0	–5	–1
$h(t)$					

a.

t	–11	–9	0	–5	–1
$h(t)$	3	4	–3	1	1

b.

t	–11	–9	0	–5	–1
$h(t)$	4	3		1	1

			$\frac{3}{2}$		

c.

t	–11	–9	0	–5	–1
$h(t)$	4	3	1	$\frac{3}{2}$	1

d.

t	–11	–9	0	–5	–1
$h(t)$	4	3	$\frac{3}{2}$	1	1

e.

t	–11	–9	0	–5	–1
$h(t)$	4	3	0	1	1

ANSWER: d
POINTS: 1
REFERENCES: 2.2.55
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/14/2015 4:51 AM

19. Complete the table.

$$f(s) = \frac{|s-2|}{s-2}$$

s	0	4	$\frac{9}{2}$	$\frac{13}{2}$	7
$f(s)$					

a.

s	0	4	$\frac{9}{2}$	$\frac{13}{2}$	7
$f(s)$	–1	1	1	1	1

b.

s	0	4	$\frac{9}{2}$	$\frac{13}{2}$	7
$f(s)$	–1	1	1	3	1

c.

s	0	4	$\frac{9}{2}$	$\frac{13}{2}$	7
$f(s)$	–1	1	3	1	1

d.

s	0	4	$\frac{9}{2}$	$\frac{13}{2}$	7
$f(s)$	1	1	3	1	1

e.

s	0	4	$\frac{9}{2}$	$\frac{13}{2}$	7
$f(s)$	–1	3	1	1	1

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/24/2014 8:21 AM
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20. Complete the table.

$$f(x) = \begin{cases} -\frac{1}{2}x + 4, & x \le 0 \\ (x-2)^2, & x > 0 \end{cases}$$

x	–6	–4	0	1	4
$f(x)$					

a.

x	–6	–4	0	1	4
$f(x)$	9	7	–3	1	4

b.

x	–6	–4	0	1	4
$f(x)$	7	6	4	3	6

c.

x	–6	–4	0	1	4
$f(x)$	7	6	4	1	4

d.

x	–6	–4	0	1	4
$f(x)$	7	6	0	1	4

e.

x	–6	–4	0	1	4
$f(x)$	7	8	4	4	1

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ANSWER: c
POINTS: 1
REFERENCES: 2.2.57
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 10/22/2014 5:34 AM

21. Find all real values of x such that $f(x) = 0$.

$f(x) = 12 - 2x$

a. $x = 6$
b. $x = 5$
c. $x = 7$
d. $x = 4$
e. $x = 8$

ANSWER: a
POINTS: 1
REFERENCES: 2.2.59
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 10/22/2014 5:36 AM

22. Find all real value of x such that $f(x) = 0$.

$$f(x) = \frac{-9x + 8}{5}$$

a. $x = \frac{8}{9}$
b. $x = \frac{8}{45}$
c. $x = \pm\frac{8}{9}$
d. $x = -\frac{8}{9}$
e. $x = \pm\frac{8}{45}$

ANSWER: a
POINTS: 1
REFERENCES: 2.2.61
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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23. Find all real values of x such that $f(x) = 0$.

$$f(x) = \frac{81 - x^2}{3}$$

a. $x = \pm 12$
b. $x = \pm 13$
c. $x = \pm 11$
d. $x = \pm 10$
e. $x = \pm 9$

ANSWER: e
POINTS: 1
REFERENCES: 2.2.62
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 10/22/2014 5:38 AM

24. Find all real values of x such that $f(x) = 0$.

$f(x) = x^2 - 8x - 20$

a. $x = -10, 2$
b. $x = -10, -2$
c. $x = 2, 10$
d. $x = -2, 10$
e. $x = -8, 8$

ANSWER: d
POINTS: 1
REFERENCES: 2.2.64
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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25. Find the domain of the function.

$f(x) = 2x^2 + 4x - 5$

a. All real numbers x such that $x > 0$
b. All real numbers x
c. All real numbers x such that $x < 0$
d. Non-negative real numbers x
e. Non-negative real numbers x except $x = 0$

Section 1.4 - Functions

ANSWER: b
POINTS: 1
REFERENCES: 2.2.71
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/24/2014 10:19 AM

26. Find the domain of the function.

$$h(t) = \frac{5}{t}$$

a. All real numbers t except $t = 0$
b. Negative real numbers t
c. All real numbers t such that $t > 0$
d. Non-negative real numbers t
e. All real numbers t such that $t = 0$

ANSWER: a
POINTS: 1
REFERENCES: 2.2.73
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/24/2014 10:18 AM

27. Find the domain of the function.

$$f(x) = \frac{x - 4}{\sqrt{x}}$$

a. Non-negative real numbers x except $x = 4$
b. All real numbers x except $x = 0$
c. Non-negative real numbers x
d. All real numbers x
e. All real numbers x such that $x > 0$

ANSWER: e
POINTS: 1
REFERENCES: 2.2.81
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/24/2014 10:20 AM

28. Find the domain of the function.

$$f(x) = \frac{\sqrt{x + 4}}{4 + x}$$

a. Non-negative real numbers x
b. All real numbers x
c. All real numbers x such that $x > -4$
d. Non-negative real numbers x except $x = 4$
e. All real numbers x such that $x < 4$

ANSWER: c
POINTS: 1
REFERENCES: 2.2.80
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/24/2014 10:21 AM

29. Assume that the domain of f is the set $A = \{-5, -3, 0, 3, 5\}$. Determine the set of ordered pairs that represents the function f.

$f(x) = x^2$

a. $\{(-5, 25), (-3, 81), (0, 0), (3, 81), (5, 25)\}$
b. $\{(-5, -125), (-3, 9), (0, 0), (3, 9), (5, -125)\}$
c. $\{(-5, 25), (-3, -27), (0, 0), (3, -27), (5, 25)\}$
d. $\{(-5, 625), (-3, 9), (0, 0), (3, 9), (5, 625)\}$
e. $\{(-5, 25), (-3, 9), (0, 0), (3, 9), (5, 25)\}$

ANSWER: e
POINTS: 1
REFERENCES: 2.2.83
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 10/22/2014 5:48 AM

30. Assume that the domain of f is the set $A = \{-4, -2, 0, 2, 3\}$. Determine the set of ordered pairs that represents the function f.

$f(x) = (x - 3)^2$

a. $\{(-4, 49), (-2, 1), (0, 9), (2, 625), (3, 49)\}$
b. $\{(-4, -343), (-2, 1), (0, 9), (2, 25), (3, -343)\}$
c. $\{(-4, 49), (-2, -125), (0, 0), (2, -125), (3, 49)\}$
d. $\{(-4, 2401), (-2, 1), (0, 0), (2, 25), (3, 2401)\}$
e. $\{(-4, 49), (-2, 25), (0, 9), (2, 1), (3, 0)\}$

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ANSWER: e
POINTS: 1
REFERENCES: 2.2.84
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 10/22/2014 5:49 AM

31. Assume that the domain of f is the set $A = \{-5, -2, 0, 2, 3\}$. Determine the set of ordered pairs that represents the function f.

$f(x) = |x + 1|$

a. $\{(-5, 4), (-2, 3), (0, 1), (2, 4), (3, 3)\}$
b. $\{(-5, 4), (-2, 4), (0, 1), (2, 4), (3, 4)\}$
c. $\{(-5, 7), (-2, 3), (0, 1), (2, 1), (3, 7)\}$
d. $\{(-5, 4), (-2, 1), (0, 1), (2, 3), (3, 4)\}$
e. $\{(-5, 6), (-2, 1), (0, 1), (2, 3), (3, 6)\}$

ANSWER: d
POINTS: 1
REFERENCES: 2.2.86
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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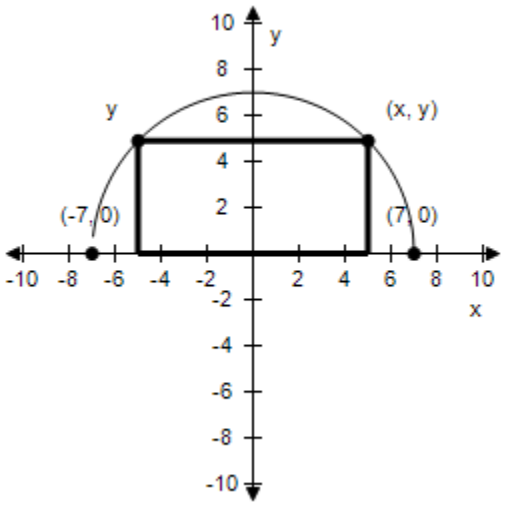
32. A rectangle is bounded by the x-axis and the semicircle $y = \sqrt{49 - x^2}$ (see figure). Select the area A of the rectangle as a function of x, and determine the domain of the function.



Section 1.4 - Functions

a. $A(x) = 2|x|\sqrt{49 - x^2}$, $-7 \le x \le 7$

b. $A(x) = -2x\sqrt{49 - x^2}$, $-7 \le x \le 7$

c. $A(x) = x\sqrt{49 - x^2}$, $x \ge 0$

d. $A(x) = 2x\sqrt{49 - x^2}$, $x \ge 0$

e. $A(x) = |x|\sqrt{49 - x^2}$, all real numbers

ANSWER: a
POINTS: 1
REFERENCES: 2.2.92
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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33. Find all real values of x such that $f(x) = 0$.

$f(x) = x^3 - x^2 - 9x + 9$

a. $x = 0, 3$
b. $x = 1, -3$
c. $x = 0, -3$
d. $x = 1, 3$
e. $x = 1, \pm 3$

ANSWER: e
POINTS: 1
REFERENCES: 2.2.66
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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34. Find the difference quotient and simplify your answer.

$f(x) = x^2 - x + 1$, $\dfrac{f(6 + h) - f(6)}{h}$, $h \ne 0$

a. $\dfrac{f(6 + h) - f(6)}{h} = h + 11$, $h \ne 0$

b. $\dfrac{f(6 + h) - f(6)}{h} = h + 15$, $h \ne 0$

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c. $\frac{f(6+h)-f(6)}{h} = h + 14, h \neq 0$

d. $\frac{f(6+h)-f(6)}{h} = h + 12, h \neq 0$

e. $\frac{f(6+h)-f(6)}{h} = h + 13, h \neq 0$

ANSWER: a
POINTS: 1
REFERENCES: 2.2.103
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 10/22/2014 6:03 AM

35. Find the difference quotient and simplify your answer.

$f(x) = 5x - x^2, \frac{f(6+h)-f(6)}{h}, h \neq 0$

a. $\frac{f(6+h)-f(6)}{h} = -h-6, h \neq 0$

b. $\frac{f(6+h)-f(6)}{h} = -h-4, h \neq 0$

c. $\frac{f(6+h)-f(6)}{h} = -h-3, h \neq 0$

d. $\frac{f(6+h)-f(6)}{h} = -h-7, h \neq 0$

e. $\frac{f(6+h)-f(6)}{h} = -h-5, h \neq 0$

ANSWER: d
POINTS: 1
REFERENCES: 2.2.104
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 10/22/2014 6:07 AM

36. Does the table describe a function?

Input value	2001	2002	2003	2004	2005
Output value	20	50	20	40	30

a. No

b. Yes

ANSWER: b

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POINTS: 1
REFERENCES: 2.2.13
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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37. Does the table describe a function?

Input value	20	40	20	30	50
Output value	2001	2002	2003	2004	2005

a. Yes
b. No

ANSWER: b
POINTS: 1
REFERENCES: 2.2.14
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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38. Does the table describe a function?

Input value	5	10	14	10	5
Output value	–13	–8	0	8	13

a. Yes
b. No

ANSWER: b
POINTS: 1
REFERENCES: 2.2.11
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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39. Does the table describe a function?

Input value	–5	–3	0	3	5
Output value	–3	–3	–3	–3	–3

a. No
b. Yes

ANSWER: b
POINTS: 1
REFERENCES: 2.2.12
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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40. Which set of ordered pairs represents a function from P to Q?
$P = \{5, 10, 15, 20\}$ $Q = \{-1, 1, 3\}$

a. $\{(5, 3), (15, 1), (5, -1), (15, 3)\}$
b. $\{(15, -1), (15, 1), (15, 3)\}$
c. $\{(5, -1), (10, 1), (10, 3), (15, 1), (20, -1)\}$
d. $\{(15, 1), (10, -1), (5, 1), (10, 3), (15, -1)\}$
e. $\{(5, -1), (10, 1), (15, 3), (20, -1)\}$

ANSWER: e
POINTS: 1
REFERENCES: 2.2.15
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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41. Which equation does not represent y as a function of x?

a. $2x = 8y$
b. $-4y = -8$
c. $5x^2 + 5y = 3$
d. $3x + 6y = -5$
e. $7y^2 + 8x = 9$

ANSWER: e
POINTS: 1
REFERENCES: 2.2.21
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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42. Which equation does not represent y as a function of x?

a. $y = \sqrt{6 + 3x}$
b. $y = |-2 + 7x^2|$
c. $x = -6y - 2$
d. $x = -8$
e. $y = -3x + 5$

ANSWER: d
POINTS: 1
REFERENCES: 2.2.33

Section 1.4 - Functions

QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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43. Evaluate the function at the specified value of the independent variable and simplify.
$g(s) = 3s + 1$
$g(-18)$

a. $g(-18) = -55$
b. $g(-18) = -54s + 3$
c. $g(-18) = -18s - 1$
d. $g(-18) = -18s + 1$
e. $g(-18) = -53$

ANSWER: e
POINTS: 1
REFERENCES: 2.2.38
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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44. Evaluate the function at the specified value of the independent variable and simplify.

$$g(w) = \begin{cases} -w, & w \leq -1 \\ -w^2 + 2w, & -1 < w \leq 1 \\ -w^3 + 2w^3, & w > 1 \end{cases}$$

$g\left(-\frac{1}{2}\right)$

a. $g\left(-\frac{1}{2}\right) = \frac{1}{2}$
b. $g\left(-\frac{1}{2}\right) = \frac{5}{8}$
c. $g\left(-\frac{1}{2}\right) = -\frac{7}{4}$
d. $g\left(-\frac{1}{2}\right) = 5$
e. $g\left(-\frac{1}{2}\right) = -\frac{5}{4}$

ANSWER: e
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/25/2014 10:36 AM
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45. Find all real values of x such that $f(x) = 0$.

$$f(x) = \frac{5x - 7}{3}$$

a. $x = 2$

b. $x = \frac{8}{5}$

c. $x = \frac{9}{5}$

d. $x = \frac{7}{5}$

e. $x = \frac{11}{5}$

ANSWER: d
POINTS: 1
REFERENCES: 2.2.61
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 10/22/2014 5:37 AM

46. Find all real value of x such that $f(x) = 0$.

$f(x) = 64x^2 - 36$

a. $x = \pm\frac{4}{3}$

b. $x = \pm\frac{3}{4}$

c. $x = -\frac{9}{16}$

d. $x = \frac{4}{3}$

e. $x = \pm\frac{9}{16}$

ANSWER: b
POINTS: 1
REFERENCES: 2.2.63
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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47. Find the value(s) of x for which $f(x) = g(x)$.

$f(x) = x^2 + x - 13$ $\quad$ $g(x) = -5x + 3$

a. x= –8, 2

b. x= 8, –2

c. x= –13, 1, $\frac{3}{5}$

d. x= –13, –14, $\frac{3}{5}$

e. x= 12, $\frac{3}{5}$

ANSWER: a
POINTS: 1
REFERENCES: 2.2.68
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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48. Find the domain of the function.

$f(w) = \frac{8w}{w + 6}$

a. $w = -6, w = 0$

b. $w = -6$

c. all real numbers $w \neq -6, w \neq 0$

d. all real numbers

e. all real numbers $w \neq -6$

ANSWER: e
POINTS: 1
REFERENCES: 2.2.74
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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49. Find the difference quotient and simplify your answer.

f(y) = $6y^2$ - $3y$, $\frac{f(2 + h) - f(2)}{h}$, $h \neq 0$

a. $\frac{f(2 + h) - f(2)}{h} = 21 + 6h$

b. $\frac{f(2 + h) - f(2)}{h} = -3 + 6y - \frac{12}{y}$

c. $\frac{f(2 + h) - f(2)}{h} = -3 + 6h$

d. $\frac{f(2 + h) - f(2)}{h} = 21 + 6y - \frac{12}{y}$

e. $\dfrac{f(2+h)-f(2)}{h} = 1 + h$

ANSWER: a
POINTS: 1
REFERENCES: 2.2.105
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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50. Evaluate the function at the specified value of the independent variable and simplify.
$q(p) = -6p - 3$
$q(-2.6)$

a. $q(-2.6) = 15.6p + 18$
b. $q(-2.6) = 18.6$
c. $q(-2.6) = 12.6$
d. $q(-2.6) = -2.6p - 3$
e. $q(-2.6) = -2.6p + 3$

ANSWER: c
POINTS: 1
REFERENCES: 10
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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51. Evaluate the function at the specified value of the independent variable and simplify.
$f(p) = \dfrac{-8p}{9p+8}$
$f(y - 5)$

a. $f(y - 5) = \dfrac{-8y+40}{9y-37}$

b. $f(y - 5) = \dfrac{-8y-40}{9y-37}$

c. $f(y - 5) = \dfrac{-8p+40}{9p-37}$

d. $f(y - 5) = -\dfrac{40}{53}$

e. $f(y - 5) = -\dfrac{40}{37}$

ANSWER: a
POINTS: 1
REFERENCES: 12
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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52. Find the domain of the function.
$g(p) = \sqrt{81 - p^2}$

a. $-9 \le p \le 9$
b. $p \le -9$ or $p \ge 9$
c. $p \ge 0$
d. $p \le 9$
e. all real numbers

ANSWER: a
POINTS: 1
REFERENCES: 17
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 10/22/2014 6:43 AM

53. Let the function f be defined by the equation $y = f(x)$, where x and $f(x)$ are real numbers. Find the domain of the function $f(x) = \sqrt{6x^2 + 16}$

a. domain: $(-\infty, -\frac{16}{36}) \cup (\frac{16}{36}, +\infty)$
b. domain: $(-\infty, -\frac{\sqrt{16}}{6})$
c. domain: $(\frac{16}{36}, +\infty)$
d. domain: $(-\frac{\sqrt{16}}{6}, \frac{\sqrt{16}}{6})$
e. domain: $(-\infty, -\frac{\sqrt{16}}{6}] \cup [\frac{\sqrt{16}}{6}, +\infty)$

ANSWER: e
POINTS: 1
QUESTION TYPE: Multiple Choice

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HAS VARIABLES: True
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54. Let the function f be defined by the equation $y = f(x)$, where x and $f(x)$ are real numbers. Find the domain and range of the function $f(x) = \sqrt{25x^2 - 3}$.

a. domain: $(-\infty, -\frac{3}{25})$

b. domain: $(-\frac{3}{5}, \frac{3}{5})$

c. domain: $(-\infty, -\frac{3}{25}] \cup [\frac{3}{25}, +\infty)$

d. domain: $(\frac{\sqrt{3}}{5}, +\infty)$

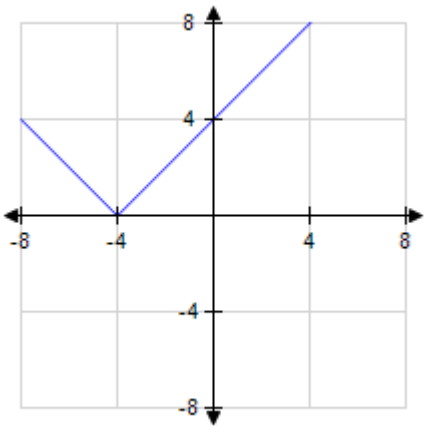
e. domain: $(-\infty, -\frac{\sqrt{3}}{5}] \cup [\frac{\sqrt{3}}{5}, +\infty)$

ANSWER: e
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/14/2015 9:27 AM

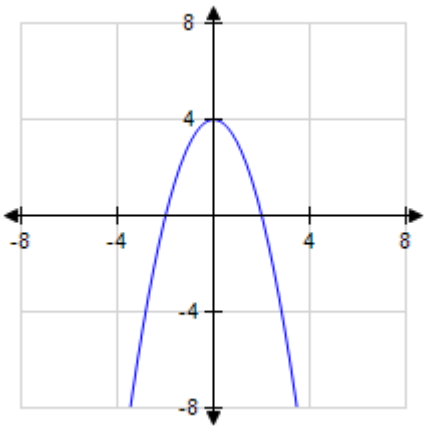
55. Find the graph of the equation.

$f(x) = |x - 4|$

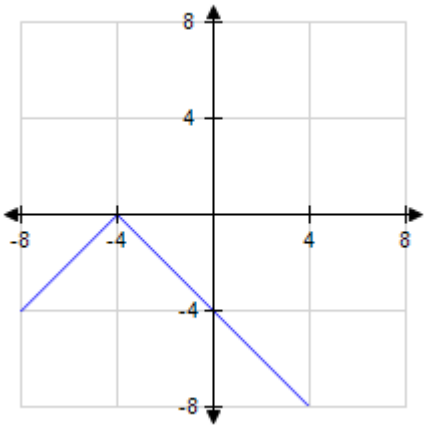
a.



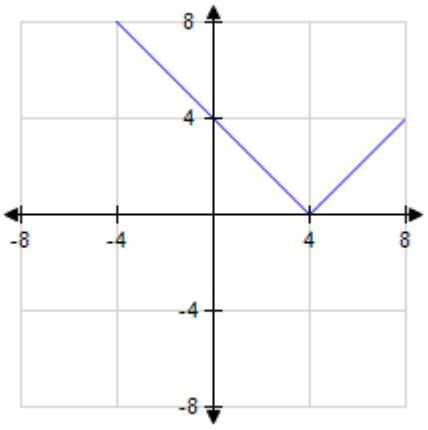
b.



c.



d.



ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/26/2014 11:24 AM

56. Evaluate the difference quotient for the function.

$f(x) = 2x - 7$

a. -7
b. $\frac{7}{2}$
c. 7
d. $2x + 7$
e. 2

ANSWER: e
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/26/2014 11:25 AM

Indicate whether the equation determines y to be a function of x. Match each equation with the corresponding answer.

Choose the correct letter for each question.
a. $y - 2x = 0$
b. $x = -2$
QUESTION TYPE: Matching
HAS VARIABLES: False
DATE CREATED: 6/10/2014 4:17 PM

Section 1.4 - Functions

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57. yes
ANSWER: a
POINTS: 1

58. no
ANSWER: b
POINTS: 1

Section 1.5 - Analyzing Graphs of Functions

1. Find the zeros of the function algebraically.

$f(x) = 2x^2 - 9x - 35$

a. $x = -\frac{5}{2}, 7$

b. $x = -\frac{5}{2}, -7$

c. $x = -\frac{2}{5}, 7$

d. $x = \frac{5}{2}, -7$

e. $x = \frac{5}{2}, 7$

ANSWER: a
POINTS: 1
REFERENCES: 2.3.23
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/24/2014 5:20 AM
DATE MODIFIED: 9/24/2014 5:35 AM

2. Find the zeros of the function algebraically.

$f(x) = 9x^2 + 21x - 18$

a. $x = \frac{2}{3}, -3$

b. $x = -\frac{2}{3}, -3$

c. $x = \frac{3}{2}, -3$

d. $x = \frac{2}{3}, 3$

e. $x = -\frac{2}{3}, 3$

ANSWER: a
POINTS: 1
REFERENCES: 2.3.24
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/24/2014 7:35 AM
DATE MODIFIED: 9/24/2014 8:50 AM

Section 1.5 - Analyzing Graphs of Functions

3. Find the zeros of the function algebraically.

$$f(x) = \frac{x}{9x^2 - 5}$$

a. $x = 5$
b. $x = 10$
c. $x = 9$
d. $x = 8$
e. $x = 0$

ANSWER: e
POINTS: 1
REFERENCES: 2.3.25
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/24/2014 8:56 AM

4. Find the zeros of the function algebraically.

$$f(x) = \frac{x^2 - 10x + 16}{7x}$$

a. $x = -2, 0, 8$
b. $x = -8, 0, 2$
c. $x = 2, 8$
d. $x = 0, 2, 8$
e. $x = -8, -2, 0$

ANSWER: c
POINTS: 1
REFERENCES: 2.3.26
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/24/2014 8:59 AM
DATE MODIFIED: 9/24/2014 9:35 AM

5. Find the zeros of the function algebraically.

$$f(x) = \frac{1}{8}x^3 - x$$

a. $x = 0, \sqrt{8}$
b. $x = 0, -\sqrt{8}$
c. $x = 0, \pm 8$

d. $x = 0, \pm\sqrt{8}$

e. $x = 0, 8$

ANSWER: d
POINTS: 1
REFERENCES: 2.3.27
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/24/2014 9:40 AM

6. Find the zeros of the function algebraically.

$f(x) = \sqrt{16x} - 1$

a. $x = 0, 16$

b. $x = \frac{1}{16}$

c. $x = 0, \sqrt{16}$

d. $x = 0, \pm\sqrt{16}$

e. $x = 0, \pm 16$

ANSWER: b
POINTS: 1
REFERENCES: 2.3.31
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/24/2014 9:51 AM

7. Find the zeros of the function algebraically.

$f(x) = \sqrt{5x + 2}$

a. $x = -\frac{2}{5}$

b. $x = \frac{2}{5}$

c. $x = \frac{5}{2}$

d. $x = -\frac{5}{2}$

e. $x = -2$

ANSWER: a

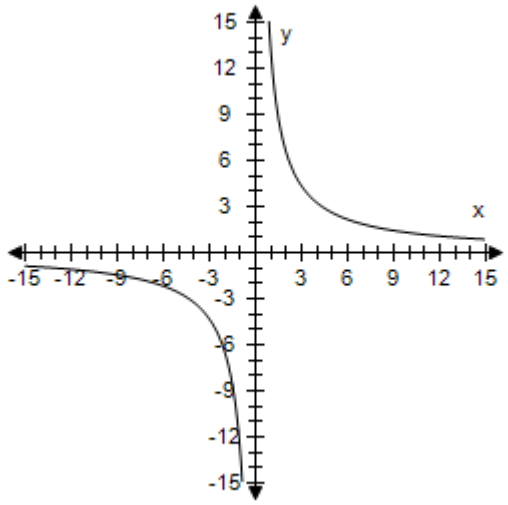
Section 1.5 - Analyzing Graphs of Functions

POINTS: 1
REFERENCES: 2.3.32
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/24/2014 9:53 AM

8. Select the graph of the function and find the zeros of the function.

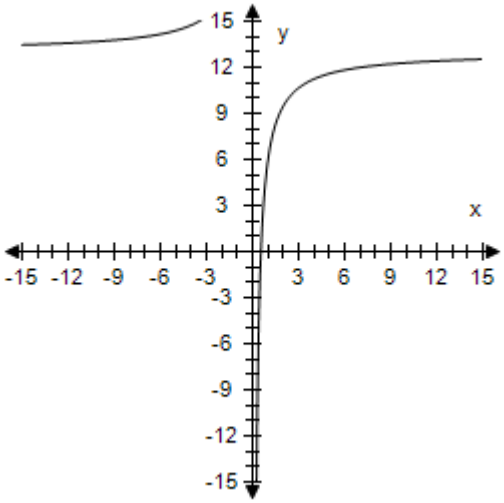
$f(x) = 7 + \frac{13}{x}$

a.



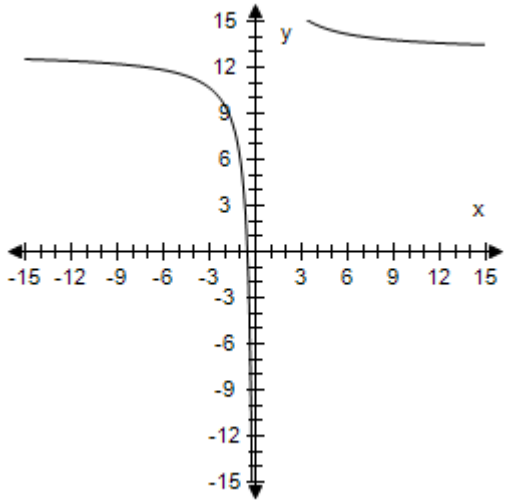
$x = -13$

b.

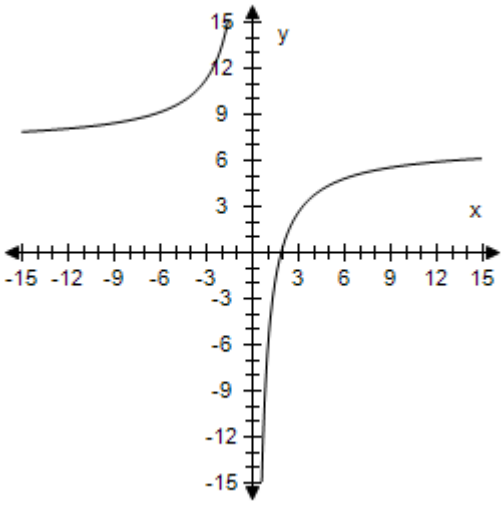


$x = \frac{7}{13}$

c.

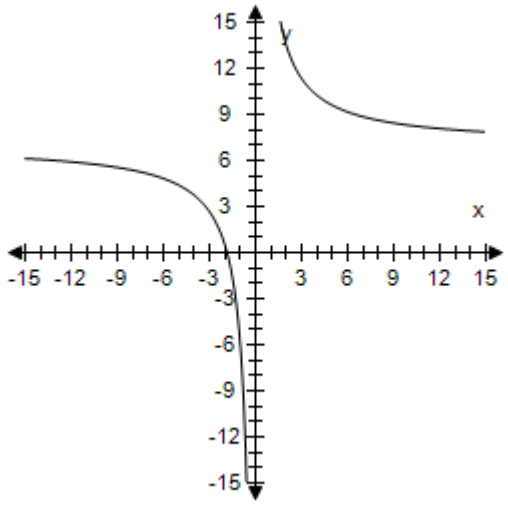


d.



$x = -\frac{7}{13}$ $x = \frac{13}{7}$

e.



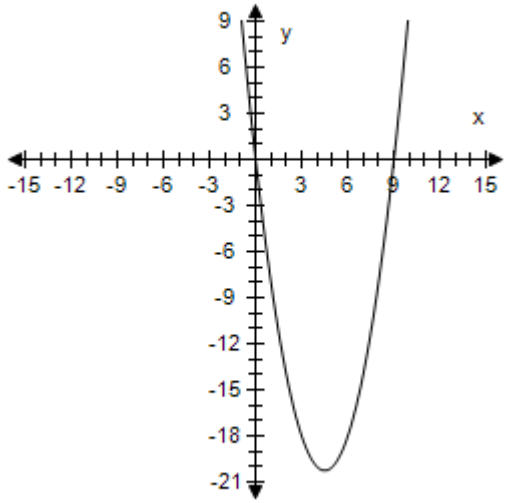
$x = -\frac{13}{7}$

ANSWER: e
POINTS: 1
REFERENCES: 2.3.33
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/25/2014 6:53 AM

9. Select the graph of the function and find the zeros of the function.

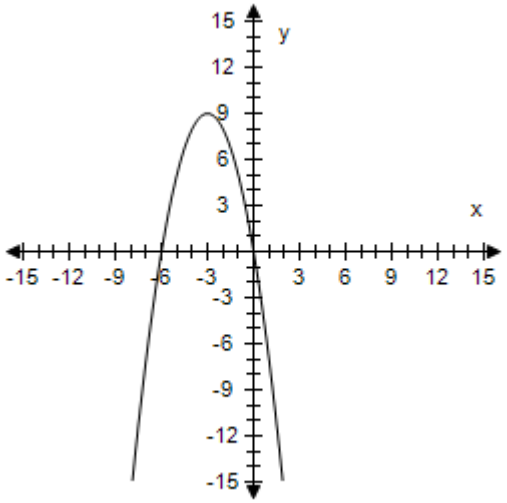
$f(x) = x(x - 6)$

a. b.



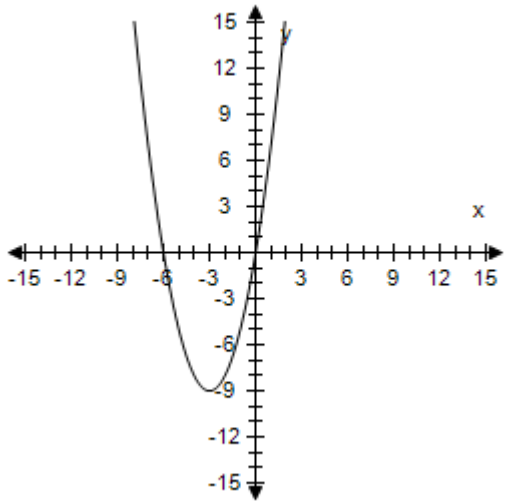
$x = 0, 9$

c.



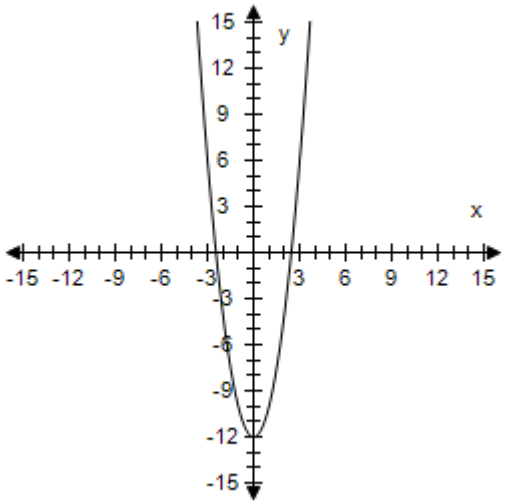
$x = -6, 0$

d.



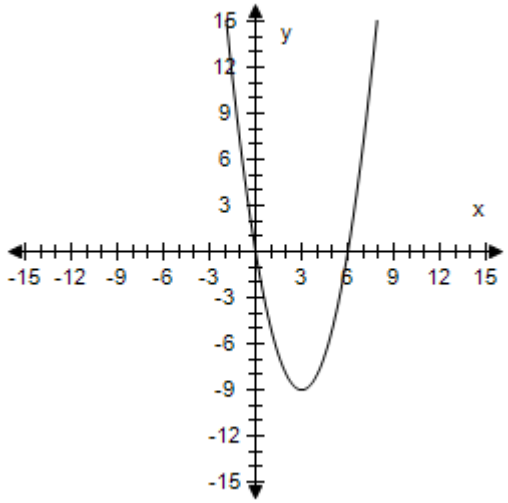
$x = -6, 0$

e.



$x = 6$

Section 1.5 - Analyzing Graphs of Functions



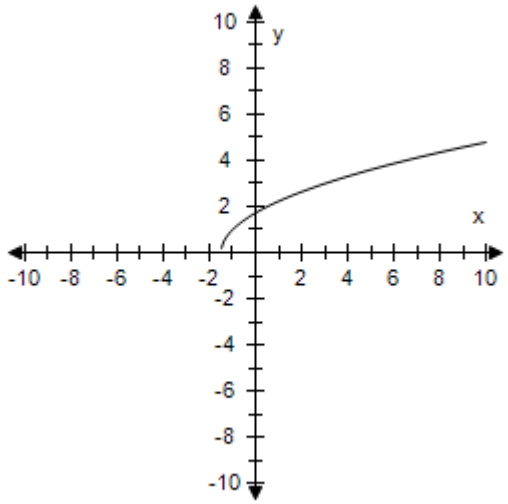
$x = 0, 6$

ANSWER: e
POINTS: 1
REFERENCES: 2.3.34
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/25/2014 6:55 AM

10. Select the graph of the function and find the zeros of the function.

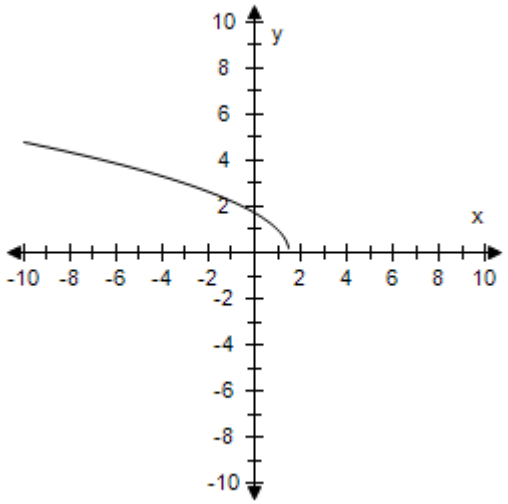
$f(x) = \sqrt{2x + 3}$

a.



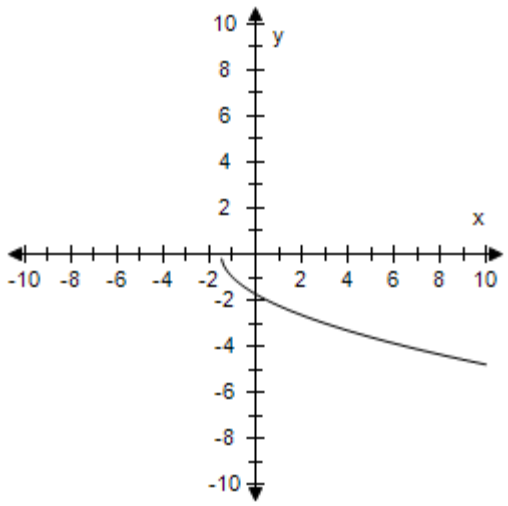
$x = \frac{2}{3}$

b.



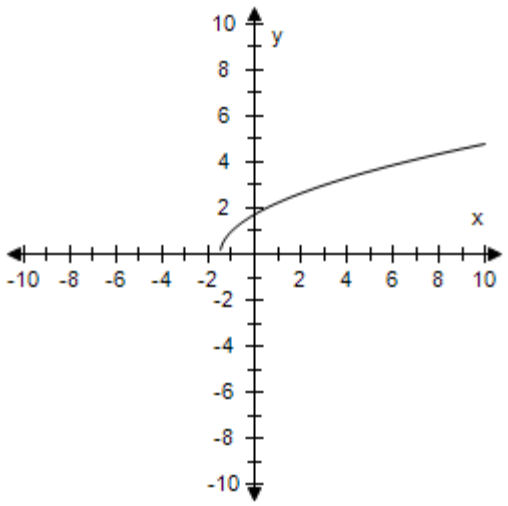
$x = \frac{3}{2}$

c.



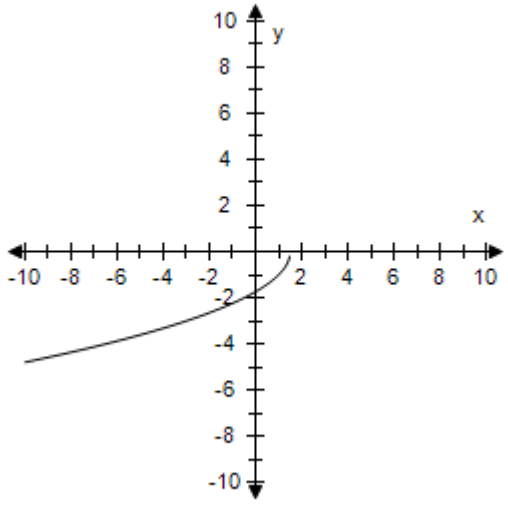
$x = -\frac{3}{2}$

d.



$x = -\frac{3}{2}$

e.



$x = -\frac{2}{3}$

ANSWER: d
POINTS: 1
REFERENCES: 2.3.35
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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11. Find the average rate of change of the function from $x_1 = 0$ to $x_2 = 3$.

Section 1.5 - Analyzing Graphs of Functions

$f(x) = -2x + 12$

a. The average rate of change from $x_1 = 0$ to $x_2 = 3$ is –2.

b. The average rate of change from $x_1 = 0$ to $x_2 = 3$ is 12.

c. The average rate of change from $x_1 = 0$ to $x_2 = 3$ is 2.

d. The average rate of change from $x_1 = 0$ to $x_2 = 3$ is –12.

e. The average rate of change from $x_1 = 0$ to $x_2 = 3$ is 19.

ANSWER: a
POINTS: 1
REFERENCES: 2.3.75
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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12. Find the average rate of change of the function from $x_1 = 0$ to $x_2 = 3$.

$f(x) = 3x + 10$

a. The average rate of change from $x_1 = 0$ to $x_2 = 3$ is –3.

b. The average rate of change from $x_1 = 0$ to $x_2 = 3$ is 3.

c. The average rate of change from $x_1 = 0$ to $x_2 = 3$ is –10.

d. The average rate of change from $x_1 = 0$ to $x_2 = 3$ is 10.

e. The average rate of change from $x_1 = 0$ to $x_2 = 3$ is 19.

ANSWER: b
POINTS: 1
REFERENCES: 2.3.76
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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13. Find the average rate of change of the function from $x_1 = 1$ to $x_2 = 5$.

$f(x) = x^2 + 18x - 4$

a. The average rate of change from $x_1 = 1$ to $x_2 = 5$ is 24.

b. The average rate of change from $x_1 = 1$ to $x_2 = 5$ is –4.

c. The average rate of change from $x_1 = 1$ to $x_2 = 5$ is –24.

d. The average rate of change from $x_1 = 1$ to $x_2 = 5$ is –18.

e. The average rate of change from $x_1 = 1$ to $x_2 = 5$ is 4.

ANSWER: a
POINTS: 1
REFERENCES: 2.3.77
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/25/2014 6:26 AM

14. Find the average rate of change of the function from $x_1 = 1$ to $x_2 = 5$.

$f(x) = x^2 - 3x + 6$

a. The average rate of change from $x_1 = 1$ to $x_2 = 5$ is 19.

b. The average rate of change from $x_1 = 1$ to $x_2 = 5$ is 3.

c. The average rate of change from $x_1 = 1$ to $x_2 = 5$ is –6.

d. The average rate of change from $x_1 = 1$ to $x_2 = 5$ is –3.

e. The average rate of change from $x_1 = 1$ to $x_2 = 5$ is 6.

ANSWER: b
POINTS: 1
REFERENCES: 2.3.78
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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15. Find the average rate of change of the function from $x_1 = 1$ to $x_2 = 3$.

$f(x) = x^3 - 8x^2 - x$

a. The average rate of change from $x_1 = 1$ to $x_2 = 3$ is 19.

b. The average rate of change from $x_1 = 1$ to $x_2 = 3$ is –20.

c. The average rate of change from $x_1 = 1$ to $x_2 = 3$ is 8.

d. The average rate of change from $x_1 = 1$ to $x_2 = 3$ is –14.

e. The average rate of change from $x_1 = 1$ to $x_2 = 3$ is 14.

ANSWER: b
POINTS: 1
REFERENCES: 2.3.79
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM

Section 1.5 - Analyzing Graphs of Functions

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16. Find the average rate of change of the function from $x_1 = 1$ to $x_2 = 6$.

$f(x) = -x^3 + 2x^2 + x$

a. The average rate of change from $x_1 = 1$ to $x_2 = 6$ is 19.

b. The average rate of change from $x_1 = 1$ to $x_2 = 6$ is –9.

c. The average rate of change from $x_1 = 1$ to $x_2 = 6$ is 9.

d. The average rate of change from $x_1 = 1$ to $x_2 = 6$ is –28.

e. The average rate of change from $x_1 = 1$ to $x_2 = 6$ is –2.

ANSWER: d
POINTS: 1
REFERENCES: 2.3.80
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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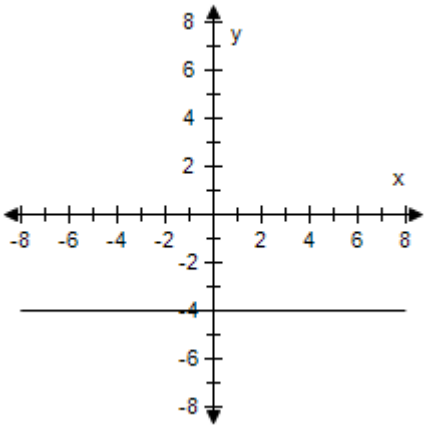
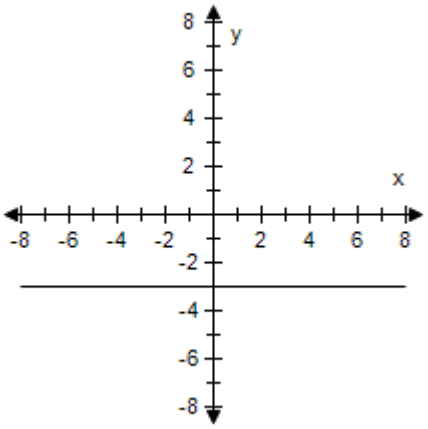
17. Select the graph of the function and determine whether it is even, odd, or neither.

$f(x) = 4$

a. Neither

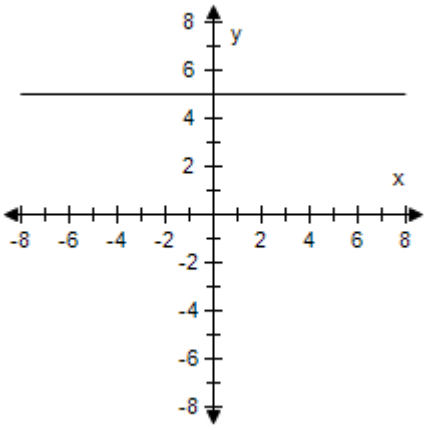


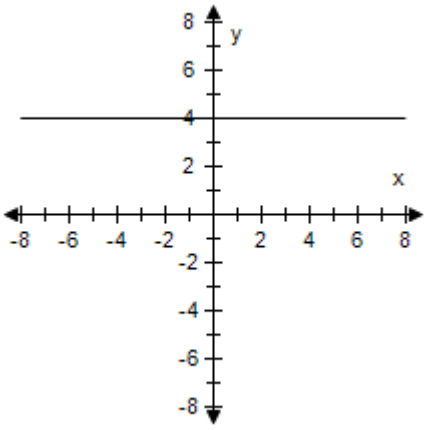
b. Odd



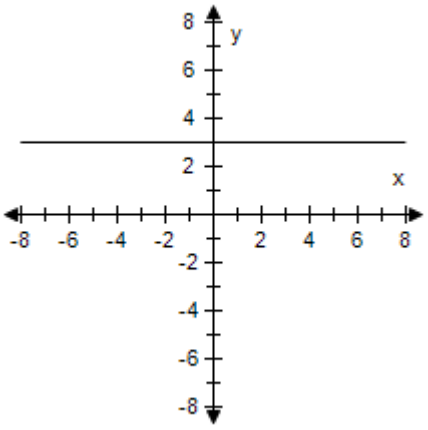
c. Even

d. Even





e. Odd

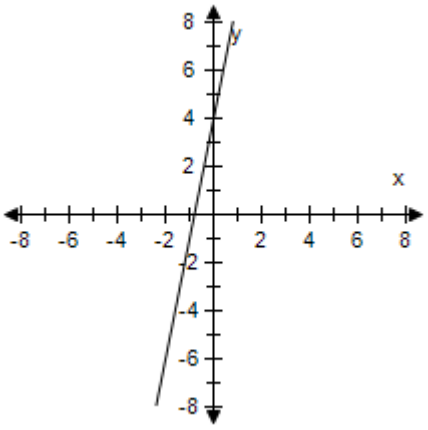


ANSWER: d
POINTS: 1
REFERENCES: 2.3.91
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/14/2015 9:01 AM

18. Select the graph of the function and determine whether it is even, odd, or neither.

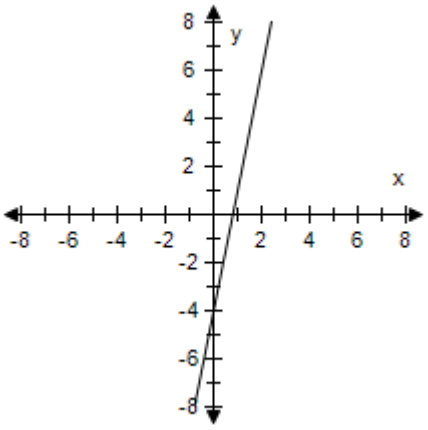
$f(x) = 6x - 5$

a. b.



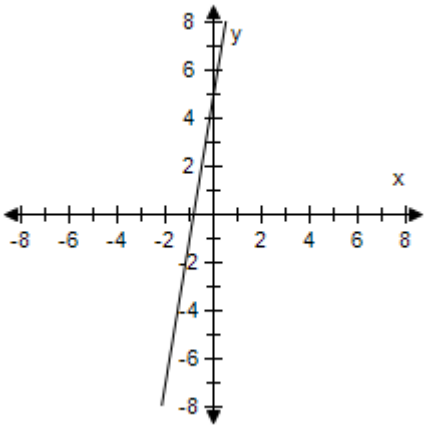
Even

c.



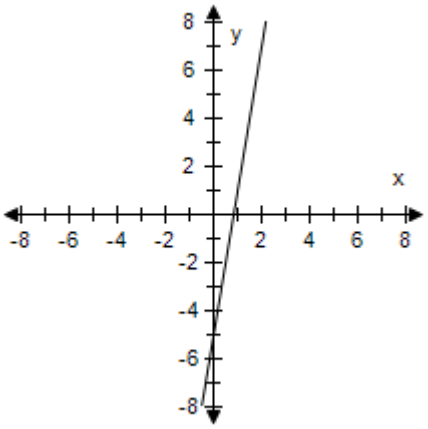
Even

d.

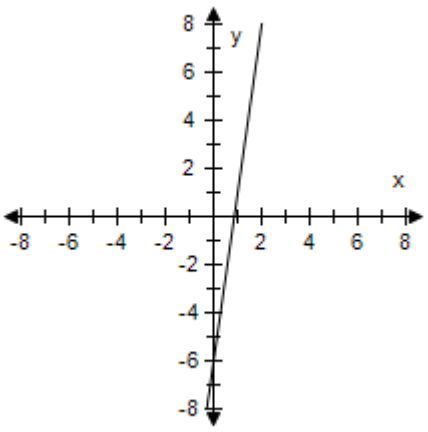


Odd

e.



Neither



Odd

ANSWER: d
POINTS: 1
REFERENCES: 2.3.93
QUESTION TYPE: Multi-Mode (Multiple choice)

Section 1.5 - Analyzing Graphs of Functions

HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
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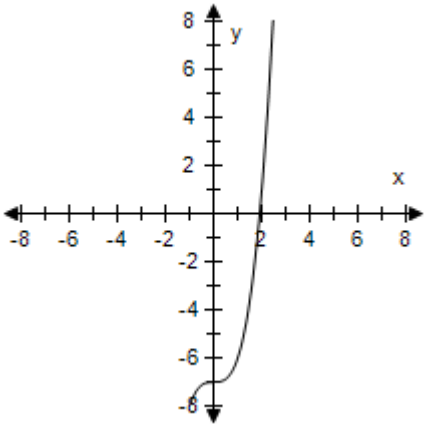
19. Select the graph of the function and determine whether it is even, odd, or neither.

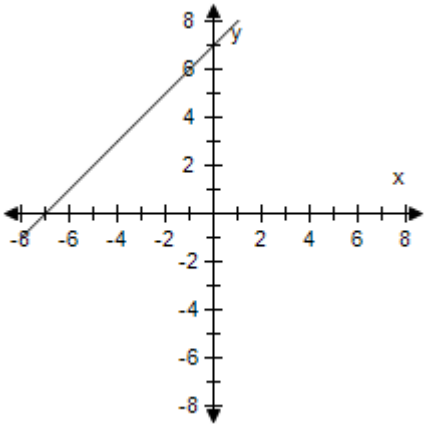
$f(x) = x^2 - 6$

a.



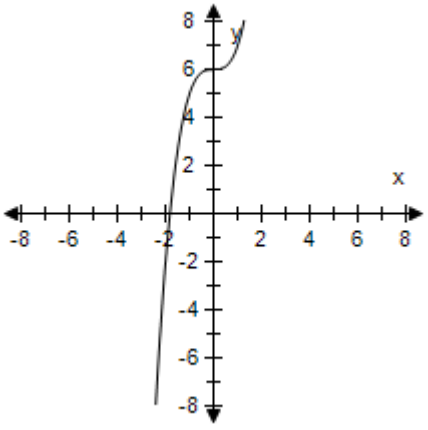
Odd

b.



Neither

c.



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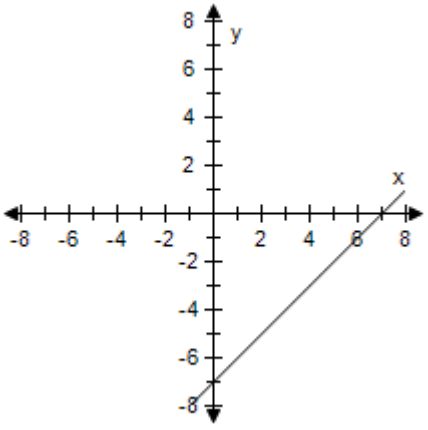
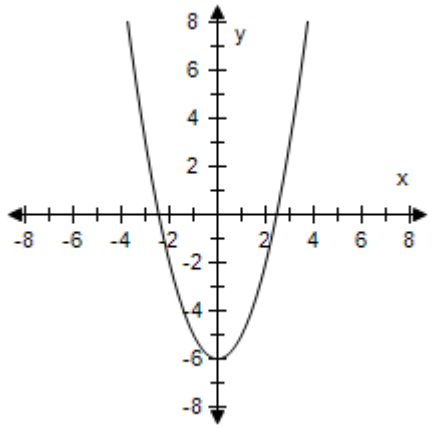
d.



Neither

e.

Section 1.5 - Analyzing Graphs of Functions



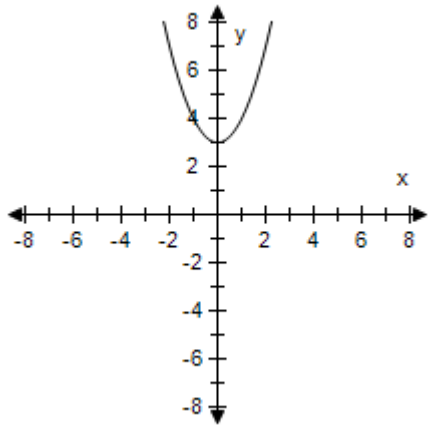
Even

ANSWER: e
POINTS: 1
REFERENCES: 2.3.95
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/25/2014 7:31 AM

20. Select the graph of the function and determine whether it is even, odd, or neither.

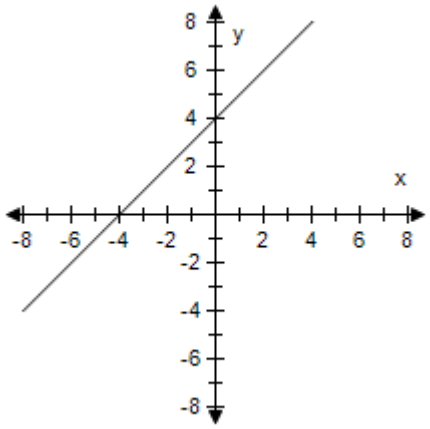
$f(x) = \sqrt{3 - x}$

a.



Even

b.

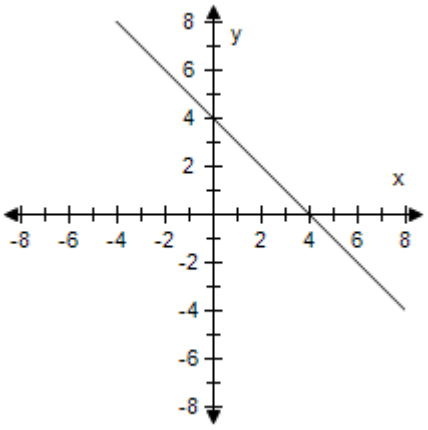


Odd

c.

d.

Section 1.5 - Analyzing Graphs of Functions



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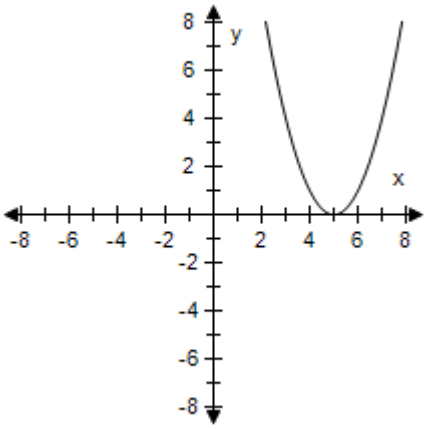
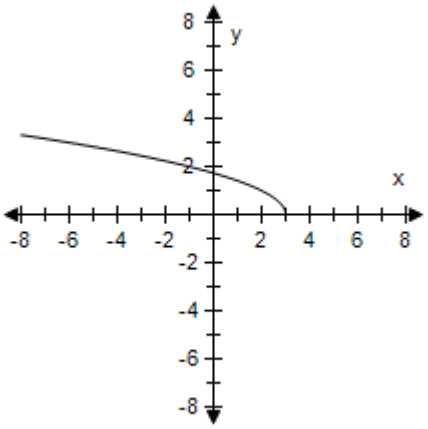


Even

e.



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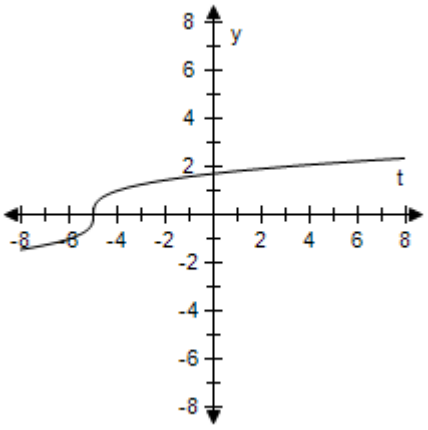
ANSWER: e
POINTS: 1
REFERENCES: 2.3.97
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/25/2014 7:37 AM

21. Select the graph of the function and determine whether it is even, odd, or neither.

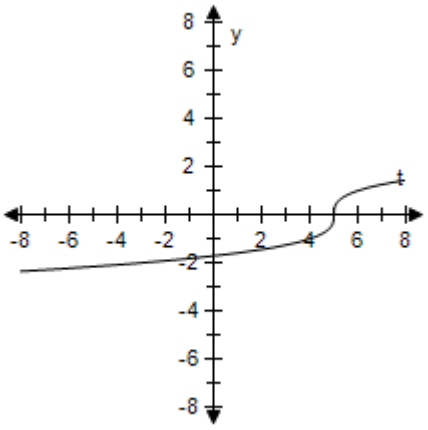
$g(t) = \sqrt[3]{t-4}$

a.

b.

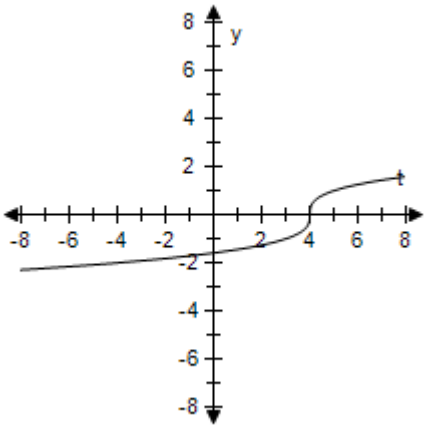


Even



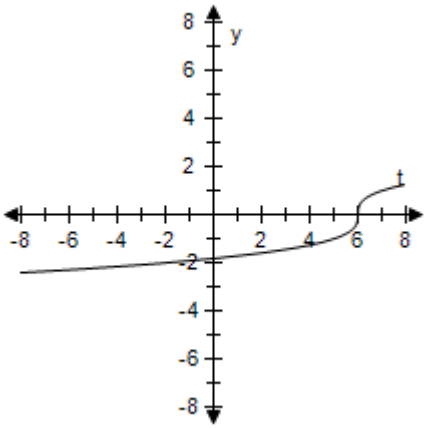
Odd

c.



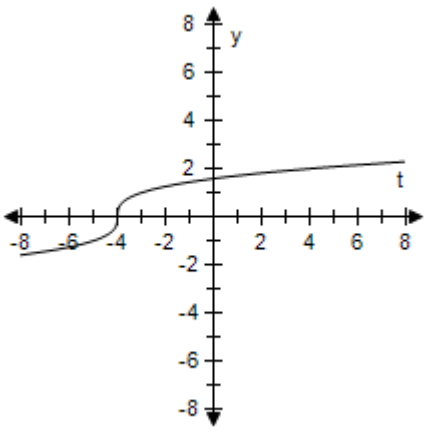
Neither

d.



Even

e.



Odd

ANSWER: c
POINTS: 1
REFERENCES: 2.3.98
QUESTION TYPE: Multi-Mode (Multiple choice)

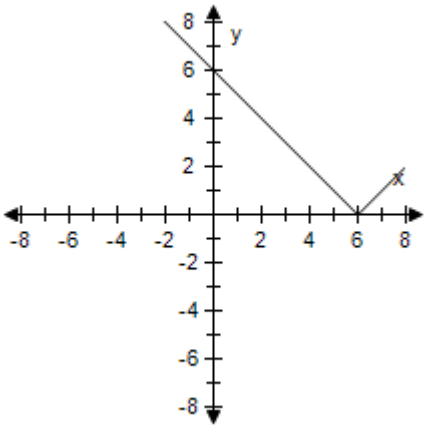
Section 1.5 - Analyzing Graphs of Functions

HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/25/2014 7:43 AM

22. Select the graph of the function and determine whether it is even, odd, or neither.

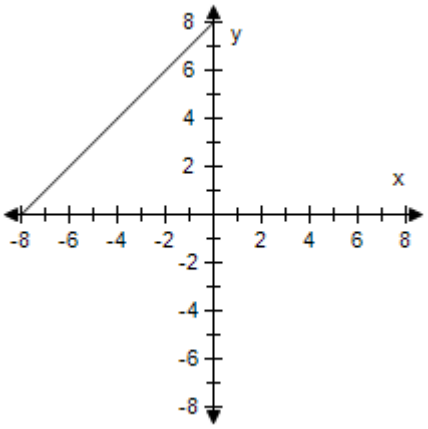
$f(x) = |x + 6|$

a.



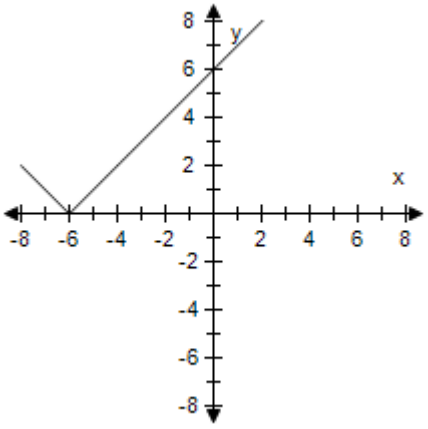
Even

b.



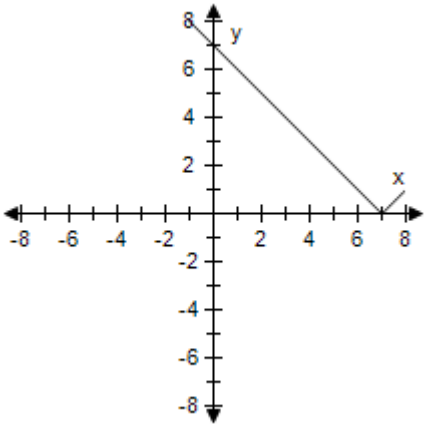
Odd

c.



Neither

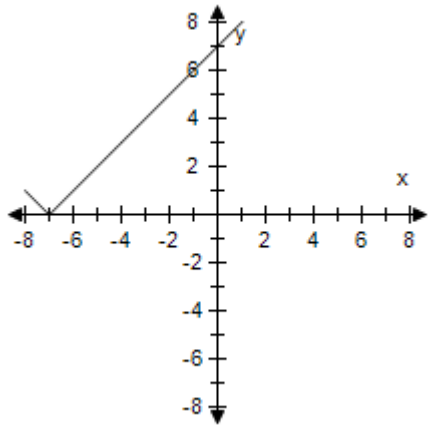
d.



Odd

e.

Section 1.5 - Analyzing Graphs of Functions



Even

ANSWER: c
POINTS: 1
REFERENCES: 2.3.99
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/25/2014 7:53 AM

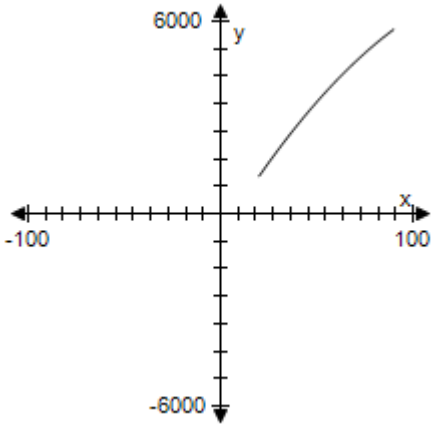
23. The number of lumens (time rate of flow of light) L from a fluorescent lamp can be approximated by the model

$L = -0.294x^2 + 97.744x - 664.875, \qquad 20 \le x \le 90$

where x is the wattage of the lamp.

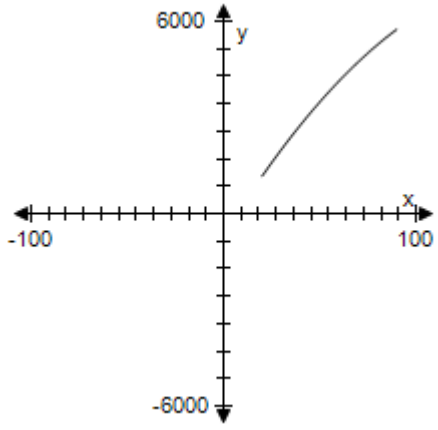
Use a graphing utility to select the graph of the function. Use the graph to estimate the wattage necessary to obtain 2400 lumens.

a.



40W

b.

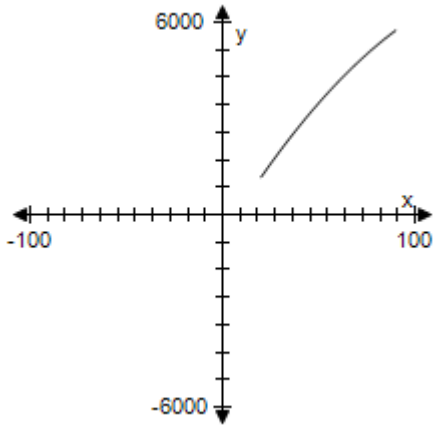


30W

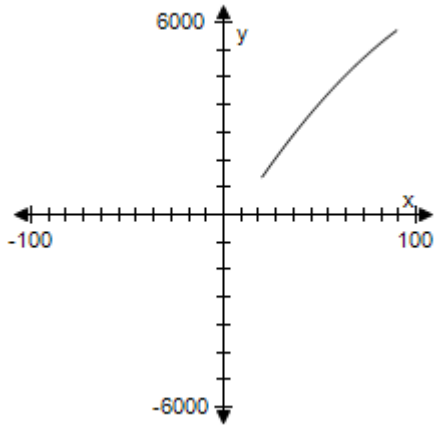
c.

d.

Section 1.5 - Analyzing Graphs of Functions

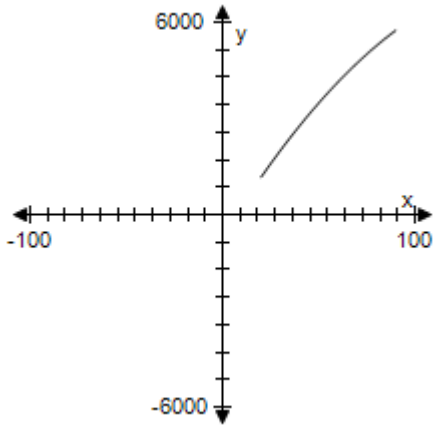


45W



25W

e.



35W

ANSWER: e
POINTS: 1
REFERENCES: 2.3.109
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/25/2014 8:36 AM

24. Find the coordinates of a second point on the graph of a function f if the given point is on the graph and the function is even.

$\left(-\frac{1}{2}, 5\right)$

a. $\left(-\frac{1}{2}, -5\right)$

b. $\left(\frac{1}{2}, 5\right)$

c. $\left(\frac{1}{2}, -5\right)$

d. $\left(-\frac{1}{2}, 5\right)$

e. None of the above

ANSWER: b
POINTS: 1
REFERENCES: 2.3.125a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/13/2015 10:02 AM

25. Find the coordinates of a second point on the graph of a function f if the given point is on the graph and the function is odd.

$\left(-\frac{9}{7}, -4\right)$

a. $\left(\frac{9}{7}, 4\right)$

b. $\left(-\frac{9}{7}, 4\right)$

c. $\left(-\frac{9}{7}, -4\right)$

d. $\left(\frac{9}{7}, -4\right)$

e. None of the above

ANSWER: a
POINTS: 1
REFERENCES: 2.3.126b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/13/2015 10:03 AM

26. Find the coordinates of a second point on the graph of a function f if the given point is on the graph and the function is even.

(4, 3)

a. (–4, –3)
b. (–4, 3)
c. (4, 3)
d. (4, –3)
e. None of the above

ANSWER: b
POINTS: 1
REFERENCES: 2.3.127a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/13/2015 10:03 AM

27. Find the coordinates of a second point on the graph of a function f if the given point is on the graph and the function is odd.

(8, –7)

a. (8, 7)
b. (8, –7)
c. (–8, –7)
d. (–8, 7)
e. None of the above

ANSWER: d
POINTS: 1
REFERENCES: 2.3.128b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/13/2015 10:04 AM

28. Find the coordinates of a second point on the graph of a function f if the given point is on the graph and the function is even.

($-x$, y)

a. ($-x$, $-y$)
b. (x, $-y$)
c. ($-x$, y)
d. (x, y)
e. None of the above

Section 1.5 - Analyzing Graphs of Functions

ANSWER: d
POINTS: 1
REFERENCES: 2.3.129a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/13/2015 10:04 AM

29. Find the coordinates of a second point on the graph of a function f if the given point is on the graph and the function is odd.

$(4a, 6b)$

a. $(-4a, -6b)$
b. $(-4a, 6b)$
c. $(4a, -6b)$
d. $(4a, 6b)$
e. None of the above

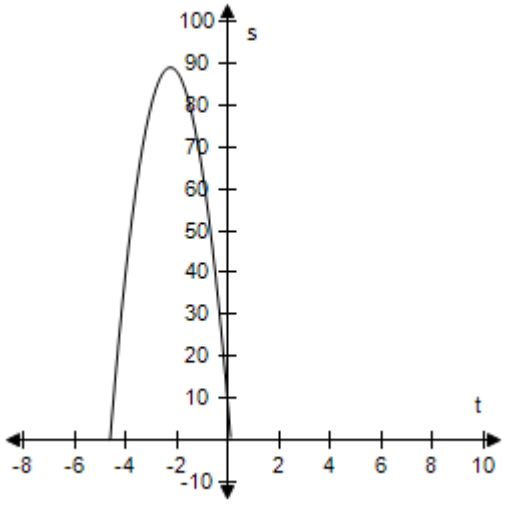
ANSWER: a
POINTS: 1
REFERENCES: 2.3.130b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/13/2015 10:04 AM

30. An object is thrown upward from a height of 8 feet at a velocity of 72 feet per second.
Use the position equation $s = -16t_2 + v_0t + s_0$ to select a function that represents the situation and select the graph of the function.

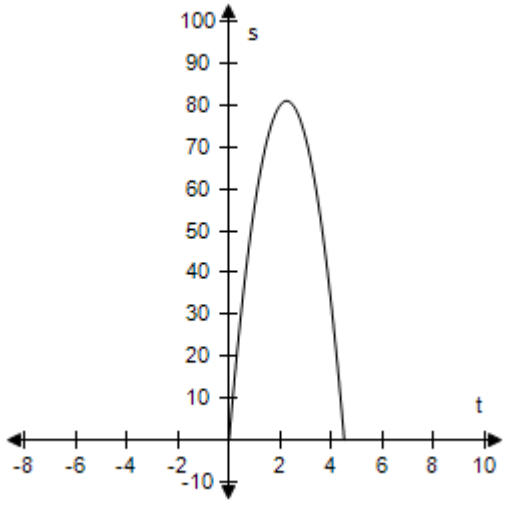
a. $s = -16t^2 - 72t + 8$

b. $s = -16t^2 + 72t$

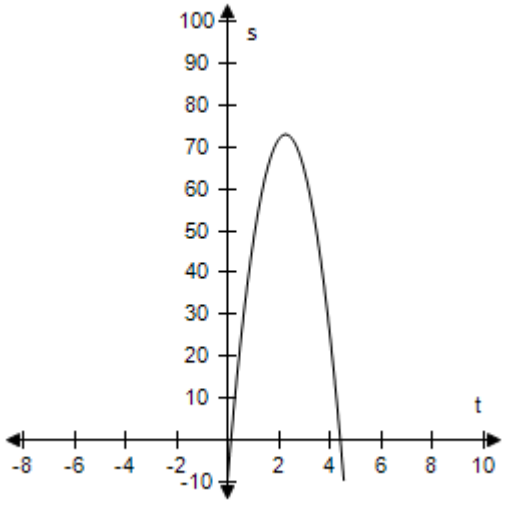
Section 1.5 - Analyzing Graphs of Functions



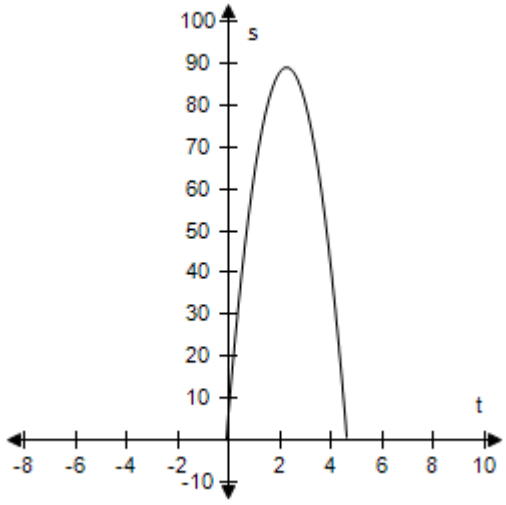
c. $s = -16t^2 + 72t - 8$



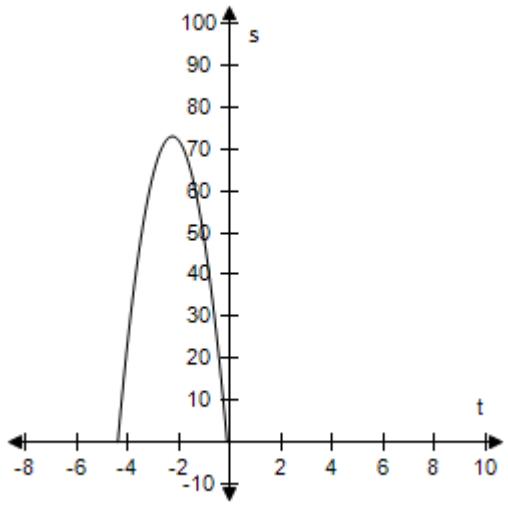
d. $s = -16t^2 + 72t + 8$



e. $s = -16t^2 - 72t - 8$



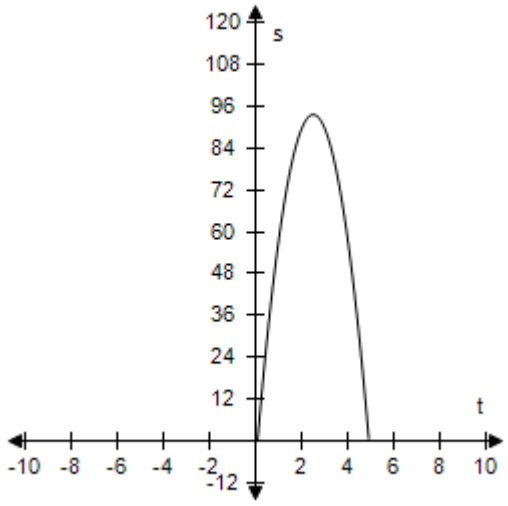
Section 1.5 - Analyzing Graphs of Functions



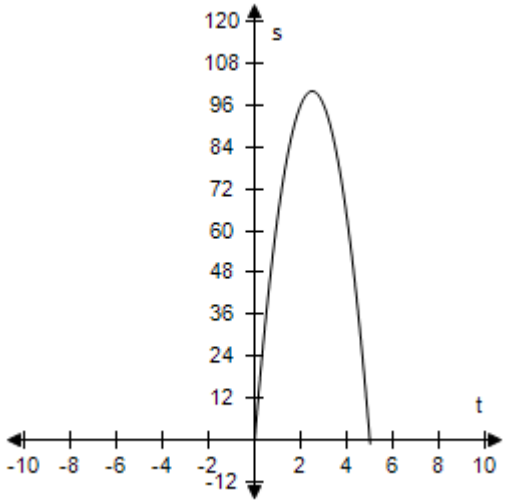
ANSWER: d
POINTS: 1
REFERENCES: 2.3.115
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/26/2014 6:17 AM

31. An object is thrown upward from a height of 6.4 feet at a velocity of 80 feet per second.
Use the position equation $s = -16t^2 + v_0t + s_0$ to select a function that represents the situation and select the graph of the function.

a. $s = -16t^2 + 80 - 6.4$



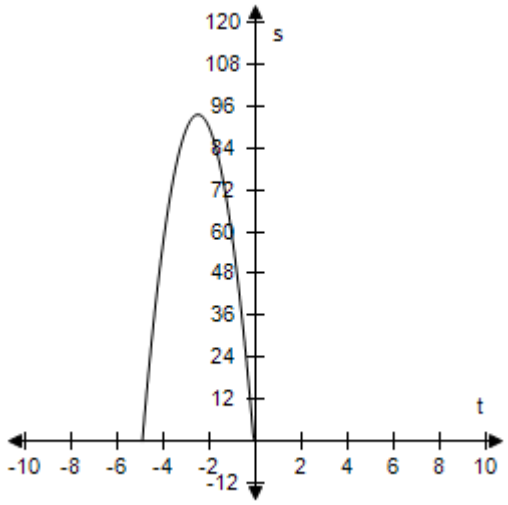
b. $s = -16t^2 + 80t$

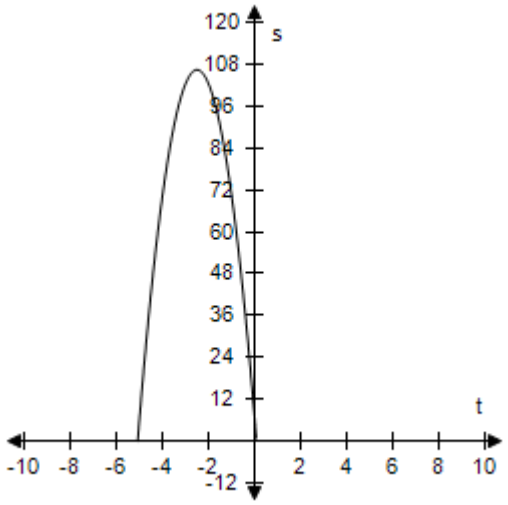


c. $s = -16t^2 - 80t - 6.4$

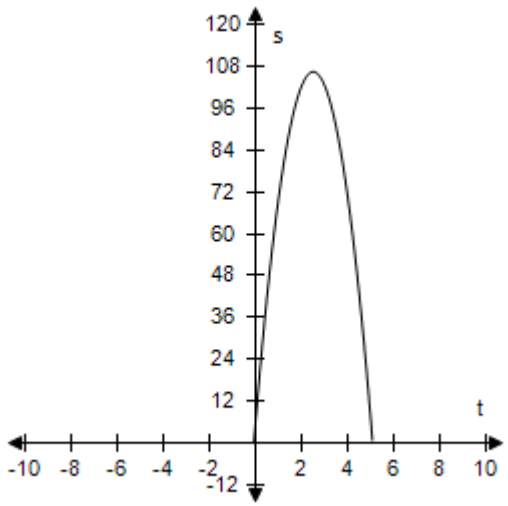
d. $s = -16t^2 - 80t + 6.4$

Section 1.5 - Analyzing Graphs of Functions





e. $s = -16t^2 + 80t + 6.4$

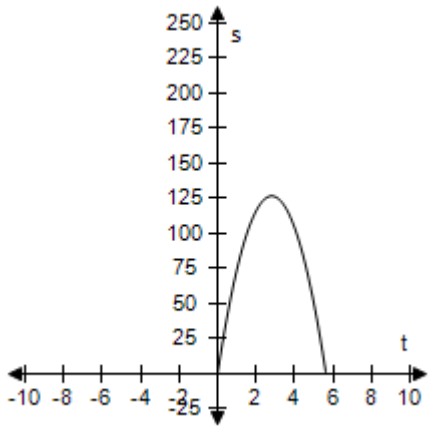


ANSWER: e
POINTS: 1
REFERENCES: 2.3.116
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 6:34 AM

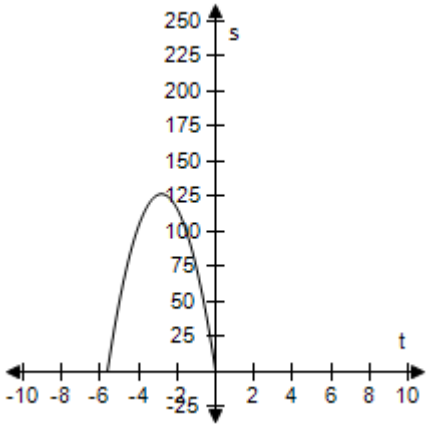
32. An object is thrown upward from ground level at a velocity of 90 feet per second.
Use the position equation $s = -16t^2 + v_0t + s_0$ to select a function that represents the situation and select the graph of the function.

Section 1.5 - Analyzing Graphs of Functions

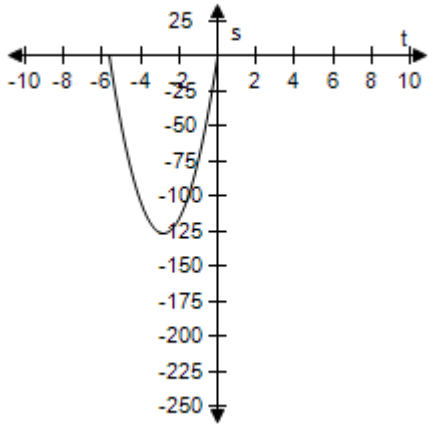
a. $s = -16t^2 + 90t$



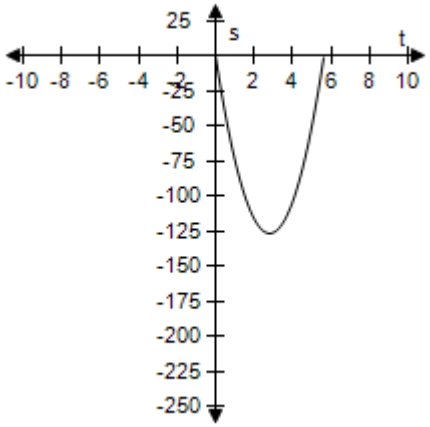
b. $s = -16t^2 - 90t$



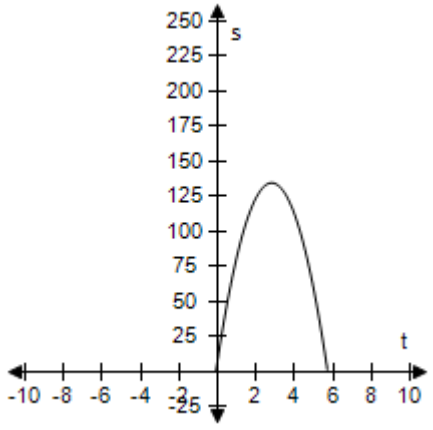
c. $s = 16t^2 + 90t$



d. $s = 16t^2 - 90t$



e. $s = -16t^2 + 90t + 8$



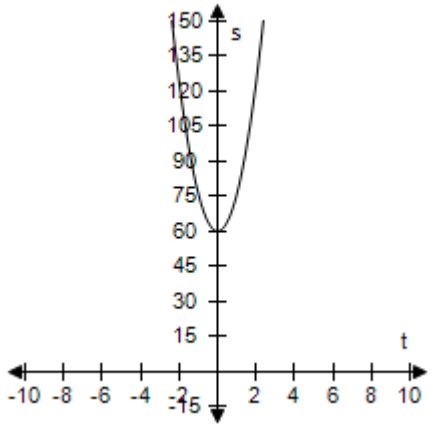
Section 1.5 - Analyzing Graphs of Functions

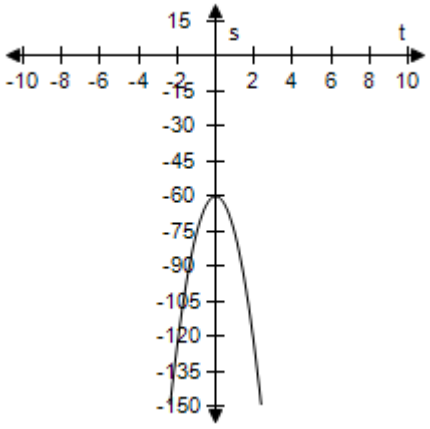
ANSWER: a
POINTS: 1
REFERENCES: 2.3.117
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/26/2014 5:56 AM

33. An object is dropped from a height of 60 feet.
Use the position equation $s = -16t^2 + v_0t + s_0$ to write a function that represents the situation and select the graph of the function.

a. $s = 16t^2 + 60$

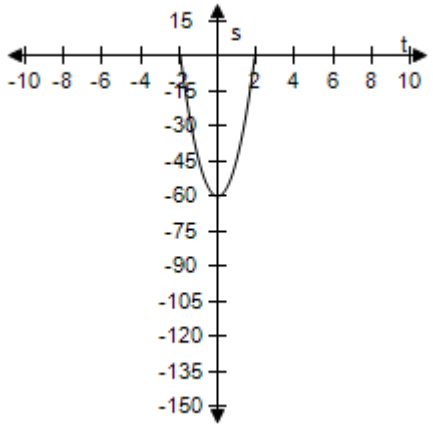
b. $s = -16t^2 - 60$

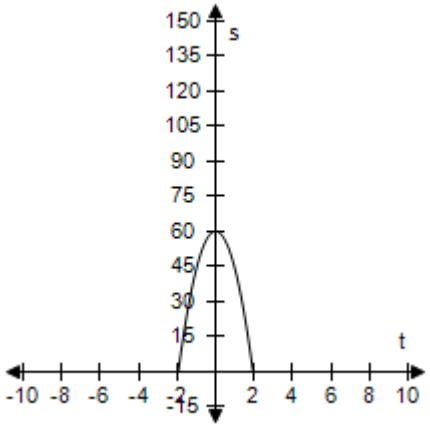




c. $s = 16t^2 - 60$

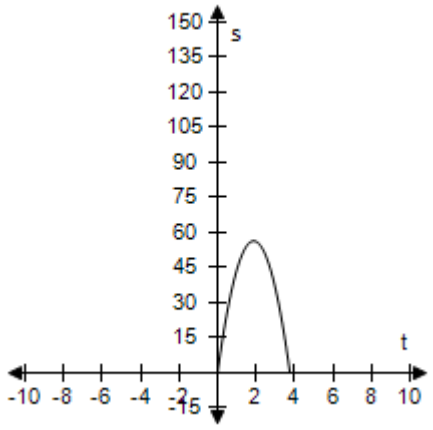
d. $s = -16t^2 + 60$





e. $s = -16t^2 + 60t$

Section 1.5 - Analyzing Graphs of Functions

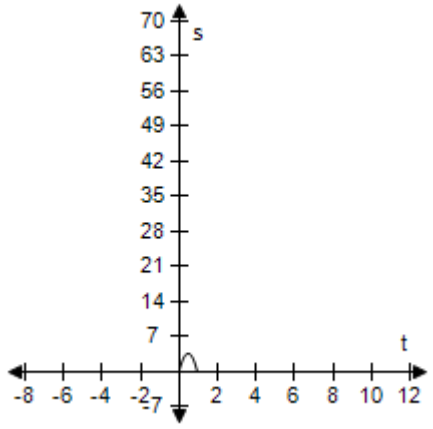


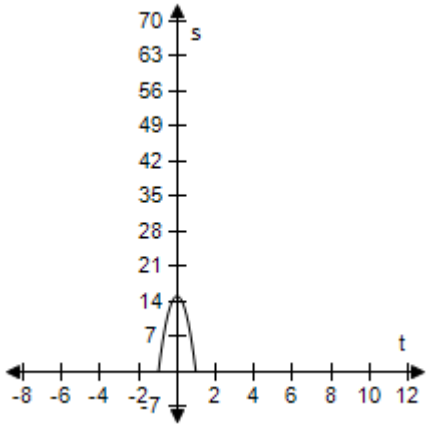
ANSWER: d
POINTS: 1
REFERENCES: 2.3.119
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/26/2014 6:00 AM

34. An object is dropped from a height of 15 feet.
Use the position equation $s = -16t^2 + v_0t + s_0$ to write a function that represents the situation and select the graph of the function.

a. $s = -16t^2 + 15t$

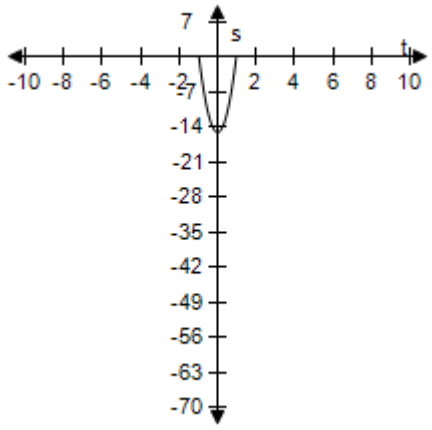
b. $s = -16t^2 + 15$

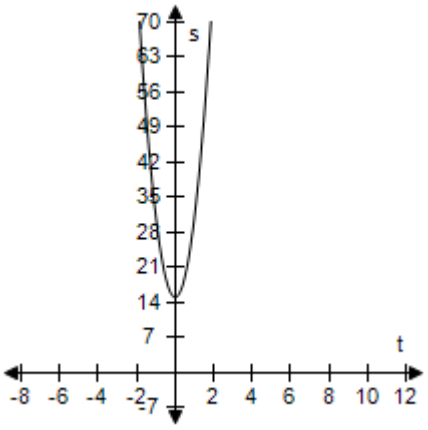




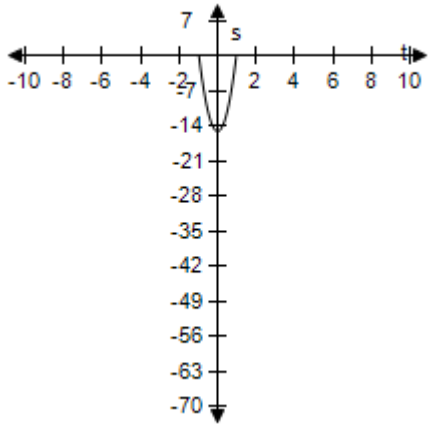
c. $s = -16t^2 - 15t$

d. $s = 16t^2 + 15$





e. $s = -16t^2 - 15$

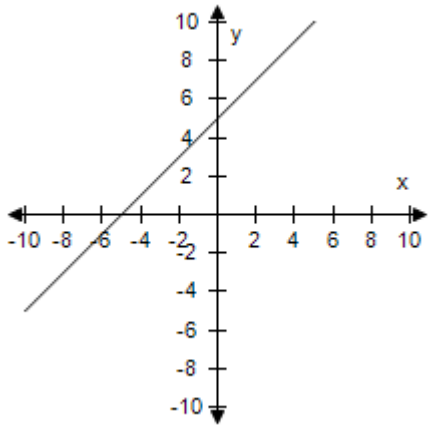


ANSWER: b
POINTS: 1
REFERENCES: 2.3.120
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/26/2014 6:05 AM

35. Select the graph of the given function and determine the interval(s) for which $f(x) \geq 0$.

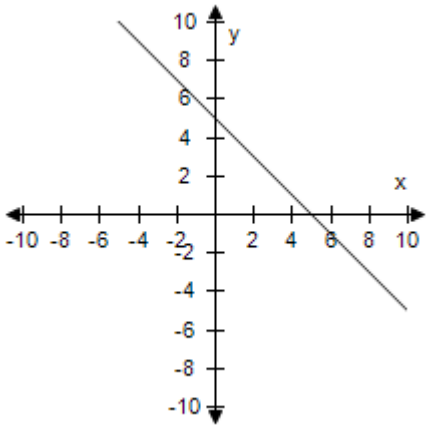
$f(x) = 5 - x$

a. b.



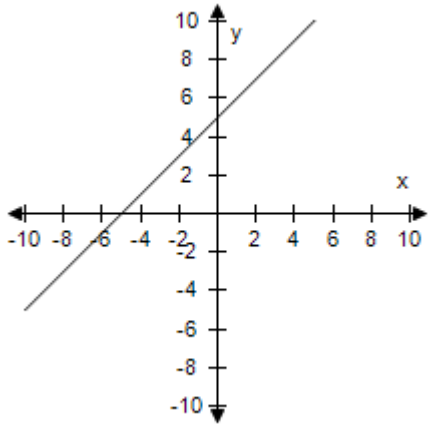
(∞, –5]

c.



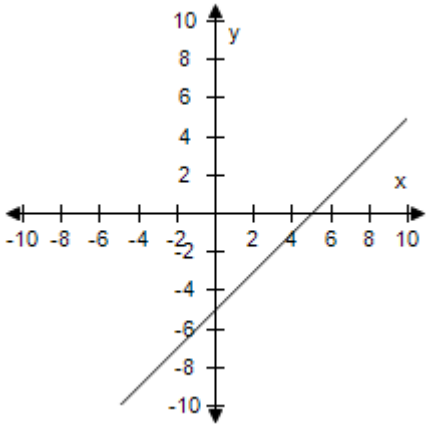
(–∞, –5]

d.

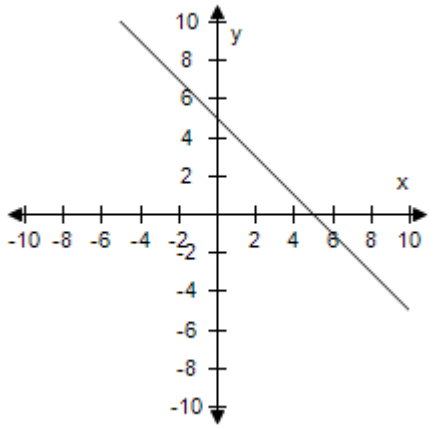


(∞, 5]

e.



(–∞, 5]



(–∞, 5]

ANSWER: e

POINTS: 1

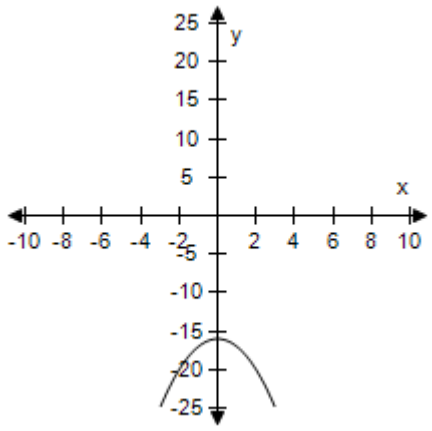
Section 1.5 - Analyzing Graphs of Functions

REFERENCES: 2.3.67
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/26/2014 5:46 AM

36. Select the graph of the given function and determine the interval(s) for which $f(x) \geq 0$.

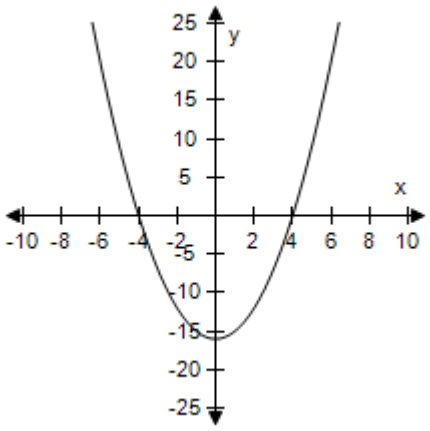
$f(x) = 16 - x^2$

a.



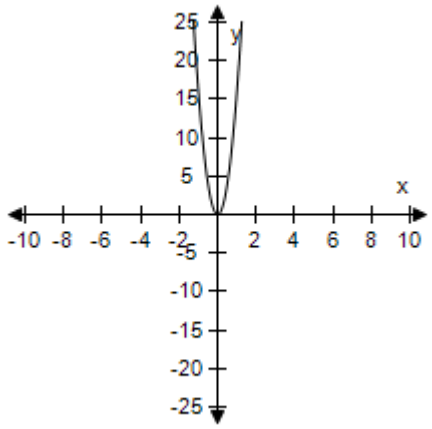
[–4, –4]

b.



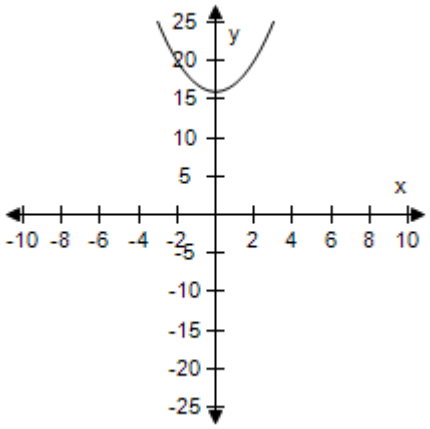
[–4, 4]

c.



[–4, –4]

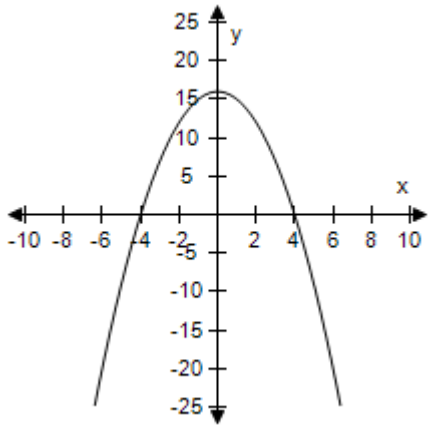
d.



[4, –4]

e.

Section 1.5 - Analyzing Graphs of Functions



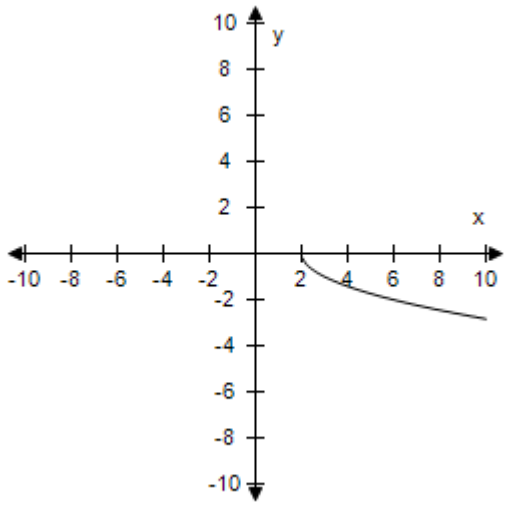
[–4, 4]

ANSWER: e
POINTS: 1
REFERENCES: 2.3.69
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/26/2014 6:12 AM

37. Select the graph of the given function and determine the interval(s) for which $f(x) \geq 0$.

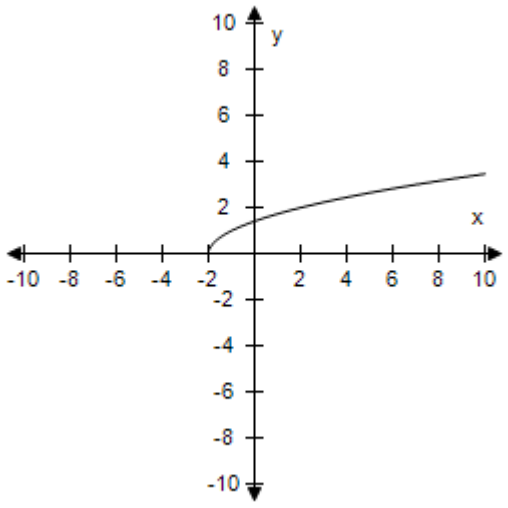
$f(x) = \sqrt{x-2}$

a.



(–∞, 2]

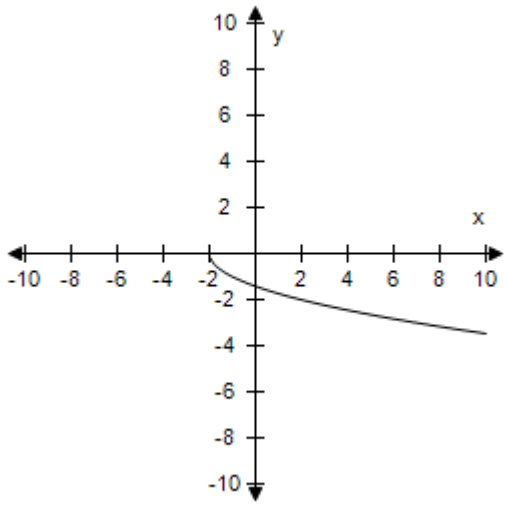
b.



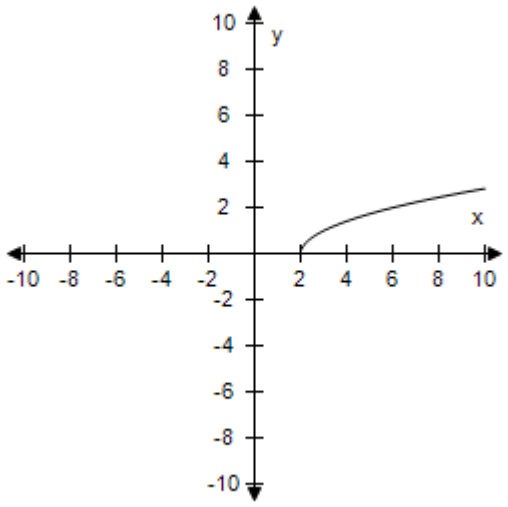
[–2, ∞)

c.

d.

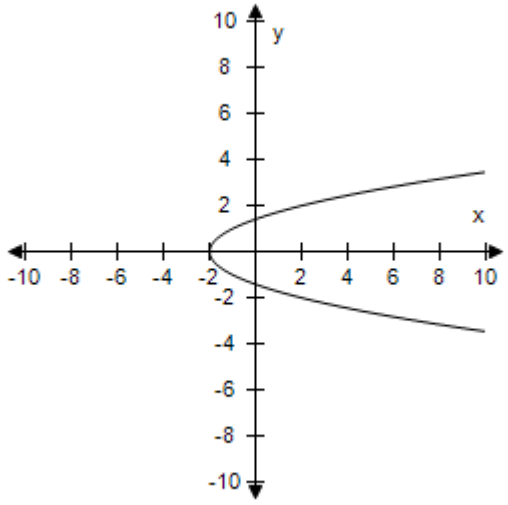


[–2, 2)



[2, ∞)

e.



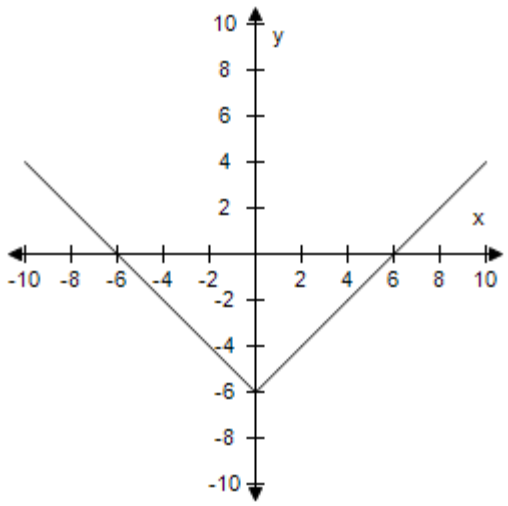
[–2, ∞)

ANSWER: d
POINTS: 1
REFERENCES: 2.3.71
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/26/2014 6:28 AM

38. Select the graph of the given function and determine the interval(s) for which $f(x) \geq 0$.

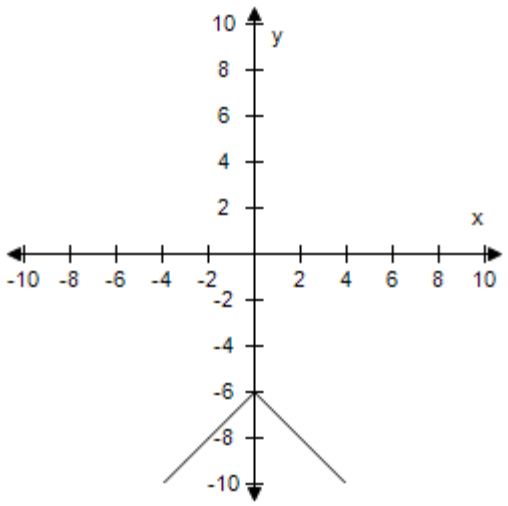
$f(x) = -(6 + |x|)$

a.



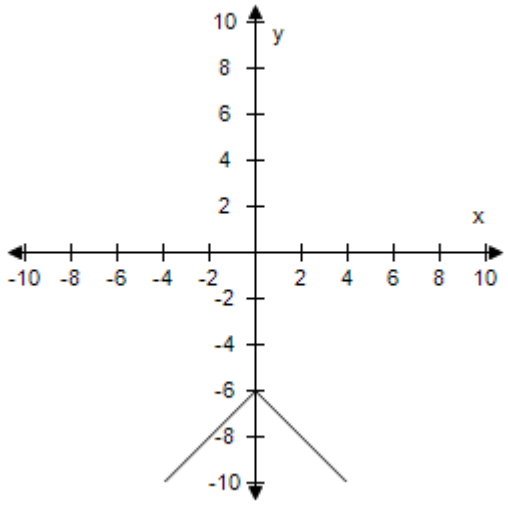
$f(x) > 6$ for all x.

b.



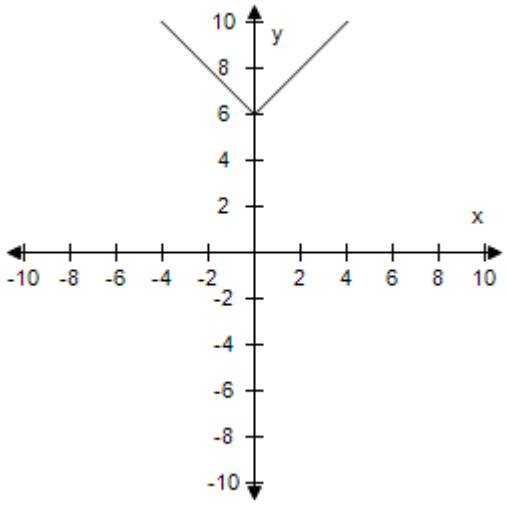
$f(x) < 0$ for all x.

c.



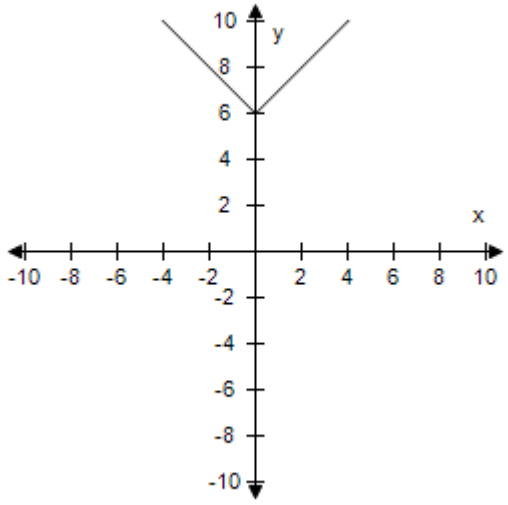
$f(x) \leq 0$ for all x.

d.



$f(x) \geq 0$ for all x.

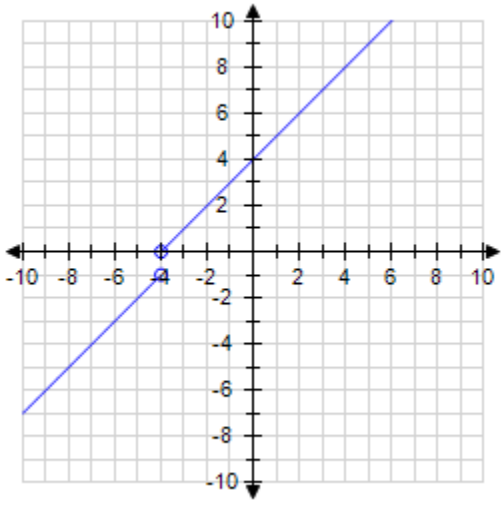
e.



$f(x) > 0$ for all x.

ANSWER: b
POINTS: 1
REFERENCES: 2.3.73
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/26/2014 6:36 AM

39. Use the graph of the function to find the domain and range of f.



a. domain: all real numbers
range: $(-\infty, -1) \cup (0, \infty)$

b. domain: $(-\infty, -4) \cup (-4, \infty)$
range: $(-\infty, -1) \cup (0, \infty)$

c. domain: $(-\infty, -1) \cup (0, \infty)$

range: $(-\infty, -4) \cup (-4, \infty)$

d. domain: all real numbers
range: $(-\infty, -1] \cup [0, \infty)$

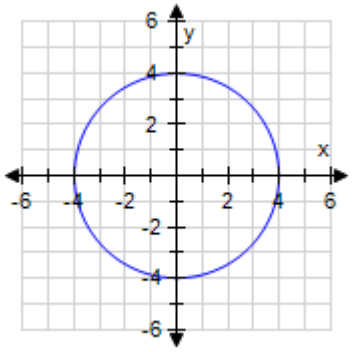
e. domain: all real numbers
range: all real numbers

ANSWER: b
POINTS: 1
REFERENCES: 2.3.12
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
LEARNING OBJECTIVES: PREC.LARS.16.117 - Find domain and range of graphs
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/26/2014 7:47 AM

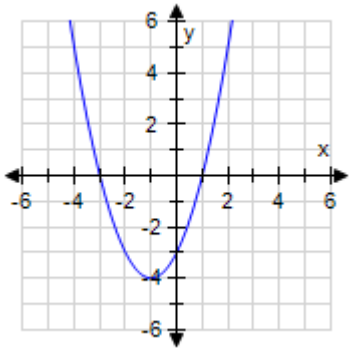
40. Use the Vertical Line Test to determine in which of the graphs y is **not** a function of x.

a. All of the choices (A, B, C, and D) represent functions.

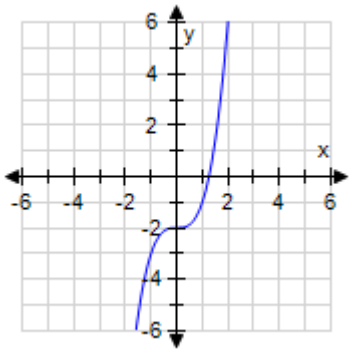
b. $x^2 + y^2 = 16$



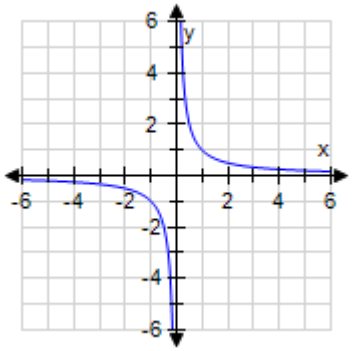
c. $y = x^2 + 2x - 3$



d. $y = x^3 - 2$



e. $y = \dfrac{1}{x}$



ANSWER: b
POINTS: 1
REFERENCES: 2.3.17
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/26/2014 8:51 AM

41. Find the zeroes of the functions algebraically.

$$f(x) = \frac{x^2 - 14x + 48}{7x}$$

a. $x = -8, x = -6, x = \dfrac{1}{7}$

b. $x = 8, x = 6$

c. $x = -8, x = -6$

d. $x = \dfrac{1}{7}$

e. $x = 8, x = 6, x = \dfrac{1}{7}$

ANSWER: b

Section 1.5 - Analyzing Graphs of Functions

POINTS: 1
REFERENCES: 2.3.26
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/26/2014 8:55 AM

42. Find the zeroes of the functions algebraically.

$f(x) = \sqrt{5x} - 9$

a. $x = \pm\frac{9}{5}$

b. $x = \pm\frac{81}{5}$

c. $x = \frac{9}{5}$

d. $x = \frac{81}{5}$

e. no real zeroes

ANSWER: d
POINTS: 1
REFERENCES: 2.3.31
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/29/2014 4:30 AM

43. Use a graphing utility to graph the function and find the zeroes of the function.

$f(x) = 7 - \frac{3}{x}$

a. $x = \frac{3}{7}$

b. $x = -\frac{3}{7}$

c. $x = \frac{7}{3}$

d. $x = -\frac{7}{3}$

e. no real zeroes

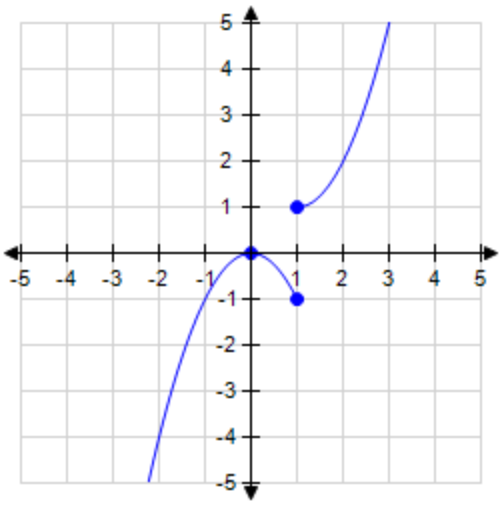
ANSWER: a

Section 1.5 - Analyzing Graphs of Functions

POINTS: 1
REFERENCES: 2.3.33
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/29/2014 4:29 AM

44. Determine the intervals over which the function is increasing, decreasing, or constant.

$$f(x) = \begin{cases} -x^2, & x < 1 \\ x^2 - 2x + 2, & x \geq 1 \end{cases}$$



a. constant on (–∞, 0)
increasing on (0, ∞)

b. increasing on (–∞, 0), (1, ∞)
descreasing on (0, 1)

c. constant on (–∞, 1)
increasing on (1, ∞)

d. constant on (–∞, 1)
descreasing on (1, ∞)

e. constant on (–∞, 0)
descreasing on (0, 1)

ANSWER: b
POINTS: 1
REFERENCES: 2.3.45
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/13/2015 10:11 AM

45. Use a graphing utility to graph the function and visually determine the intervals over which the function is increasing, decreasing, or constant.

$f(x) = 6x^2 - 12x + 6$

a. increasing on $(-\infty, \infty)$
b. descreasing on $(-\infty, 1)$
   increasing on $(1, \infty)$
c. increasing on $(-\infty, 1)$
   descreasing on $(1, \infty)$
d. descreasing on $(-\infty, \infty)$
e. descreasing on $(1, 1)$
   increasing on $(1, \infty)$

ANSWER: b
POINTS: 1
REFERENCES: 2.3.52
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/13/2015 10:28 AM

46. Use a graphing utility to graph the function and approximate (to two decimal places) any relative minimum or relative maximum values.

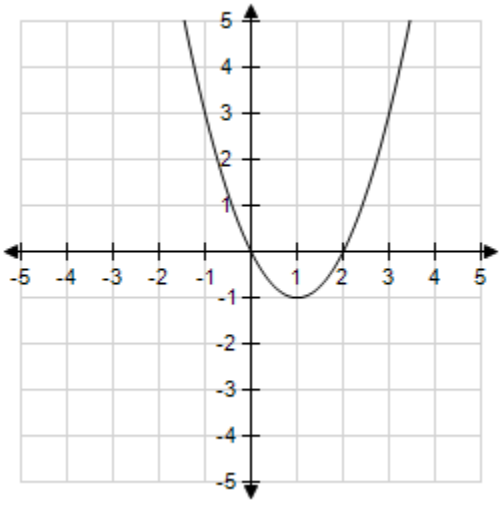
$f(x) = x^3 + 2x^2 - 2x + 3$

a. relative maximum: (2.58, 0.39)
   relative minimum: (7.27, –1.72)
b. relative maximum: (0.39, 2.58)
   relative minimum: (–1.72, 7.27)
c. relative maximum: (–1.72, 7.27)
   relative minimum: (0.39, 2.58)
d. relative maximum: (7.27, –1.72)
   relative minimum: (2.58, 0.39)
e. relative maximum: (2.58, 28.33)
   relative minimum: (7.27, 478.41)

ANSWER: c
POINTS: 1
REFERENCES: 2.3.50
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/29/2014 6:47 AM

47. Graph the function and determine the interval(s) for which $f(x) \geq 0$.

$f(x) = -x^2 - 2x$



a. $(-\infty, -2) \cup (0, \infty)$

b. $(-2, 0)$

c. $[-2, 0]$

d. $\{-2\}$

e. $(-\infty, -2] \cup [0, \infty)$

ANSWER: c
POINTS: 1
REFERENCES: 2.3.70
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/14/2015 8:57 AM

48. Determine whether the function is even, odd, or neither.

$f(x) = 6x^{3/4}$

a. neither

b. even

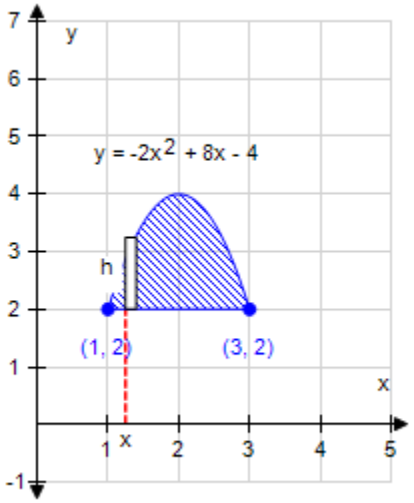
c. odd

ANSWER: a
POINTS: 1
REFERENCES: 2.3.95
QUESTION TYPE: Multi-Mode (Multiple choice)

Section 1.5 - Analyzing Graphs of Functions

HAS VARIABLES: True
LEARNING OBJECTIVES: PREC.LARS.16.121 - Identify even and odd functions
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/29/2014 7:26 AM

49. Write the height h of the rectangle as a function of x.



a. $h(x) = x^2 + 2x$

b. $h(x) = -2x^2 + 8x - 6$

c. $h(x) = -2x^2 + 8x - 6$

d. $h(x) = -2x^2 + 8x - 4$

e. $h(x) = -2x^2 + 6x - 4$

ANSWER: b
POINTS: 1
REFERENCES: 2.3.103
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/30/2014 9:50 AM

50. Use the position equation $s = -16t^2 + v_0t + s_0$ to write a function that represents the situation and give the average velocity of the object from time t_1 to time t_2.
An object is thrown upward from a height of 38 feet at a velocity of 84 feet per second.
$t_1 = 1$, $t_2 = 3$

a. $s = -16t^2 + 38t + 84$; avg. velocity = 79 ft/s

b. $s = -16t^2 + 84t + 38$; avg. velocity = 125 ft/s

c. $s = -16t^2 + 38t + 84$; avg. velocity = –26 ft/s

d. $s = -16t^2 + 84t + 38$; avg. velocity = 20 ft/s

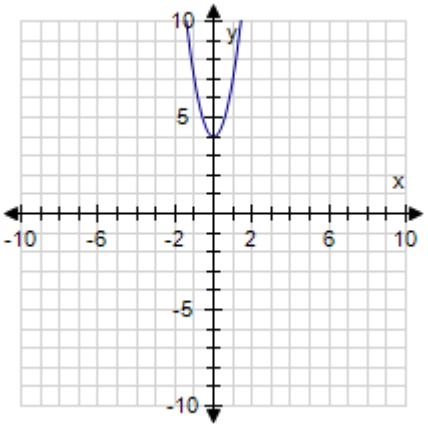
e. $s = -16t^2 + 84t + 38$; avg. velocity = 40 ft/s

ANSWER: d
POINTS: 1
REFERENCES: 2.3.115
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 4/17/2015 4:08 AM
DATE MODIFIED: 4/17/2015 4:38 AM

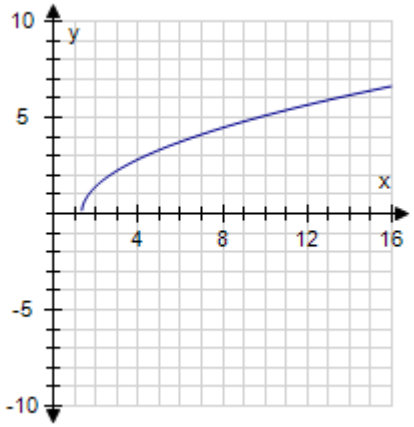
51. Find the graph of the equation.

$f(x) = \sqrt{3x - 4}$

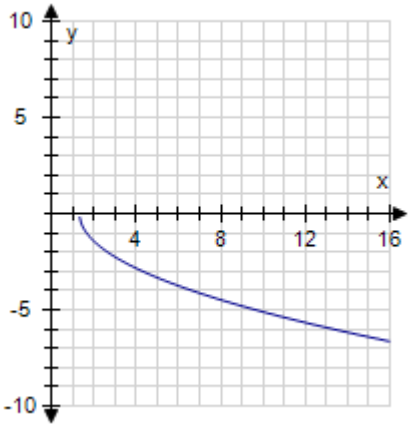
a.



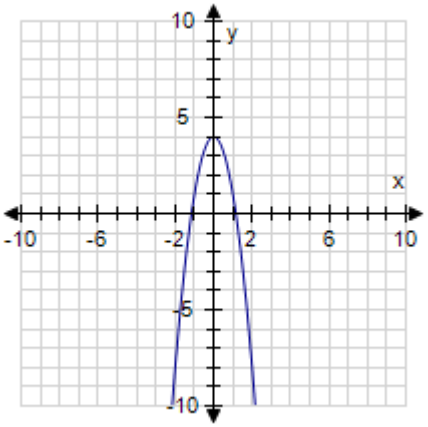
b.



c.

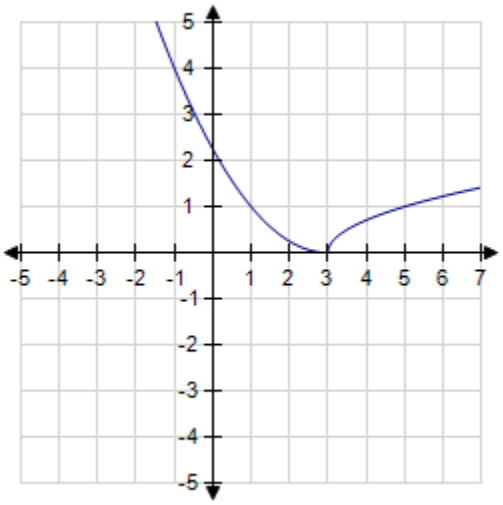


d.



ANSWER: b
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/29/2014 9:20 AM

52. Tell where the function is decreasing.



a. $(3, \infty)$

b. $(-\infty, 3)$

c. always increasing

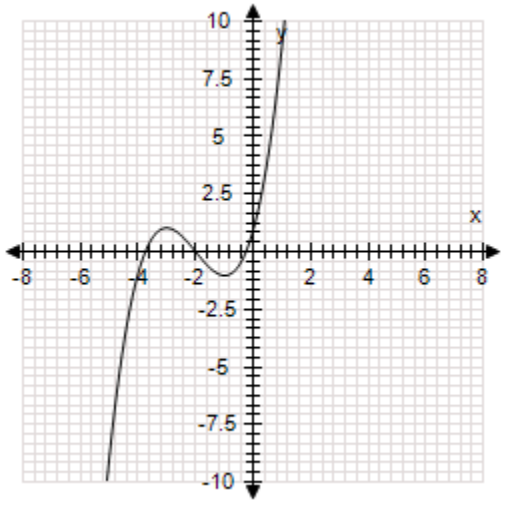
d. always constant

e. always decreasing

ANSWER: b
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/16/2015 6:46 AM

53. The graph of a function is sketched below.

Section 1.5 - Analyzing Graphs of Functions



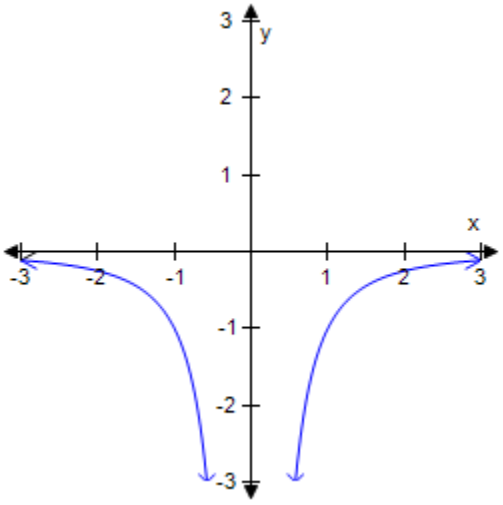
Determine the interval on which the function is decreasing.

a. $(-\infty, -3] \cap [-1, \infty)$
b. $[-3, -1]$
c. $[-1, -1]$
d. $[1, 3]$
e. $(-\infty, -3] \cap [-1, \infty)$

ANSWER: b
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/16/2015 6:51 AM

54. Tell where the function is decreasing.

Section 1.5 - Analyzing Graphs of Functions



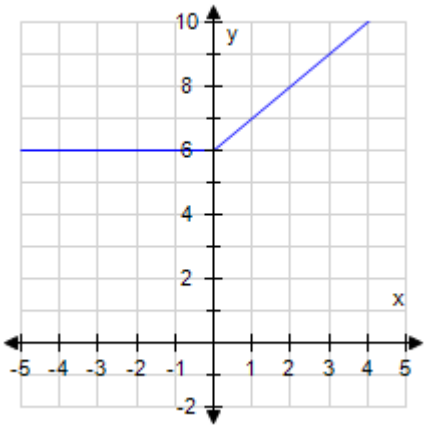
a. always increasing
b. always decreasing
c. (0, ∞)
d. always constant
e. (–∞, 0)

ANSWER: e
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/14/2015 9:36 AM

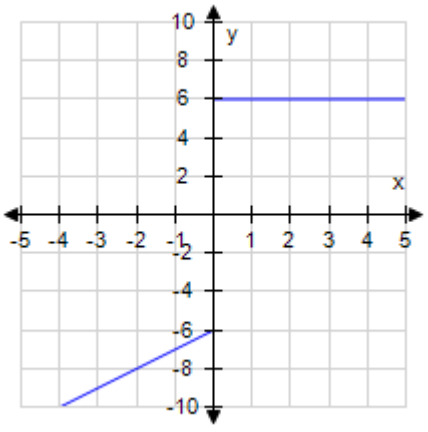
55. Graph the piecewise-defined function.

$$y = f(x) = \begin{cases} x + 6, \text{if } x < 0 \\ 6, \text{if } x \geq 0 \end{cases}$$

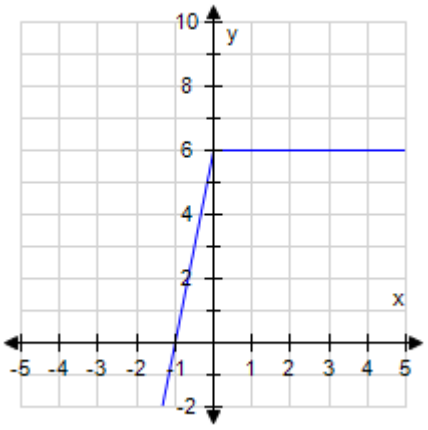
a.



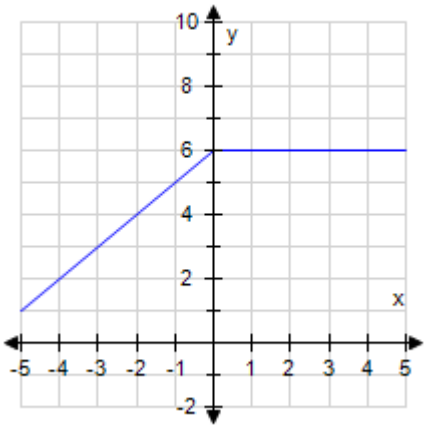
b.



c.



d.

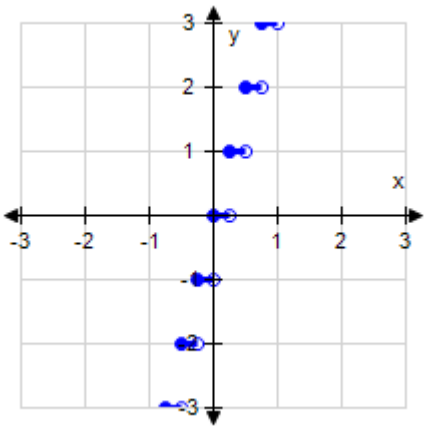


ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/1/2014 4:59 AM

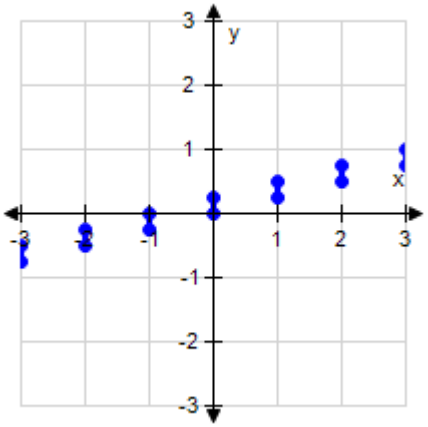
56. Graph the function.

$y = [[4x]]$

a.



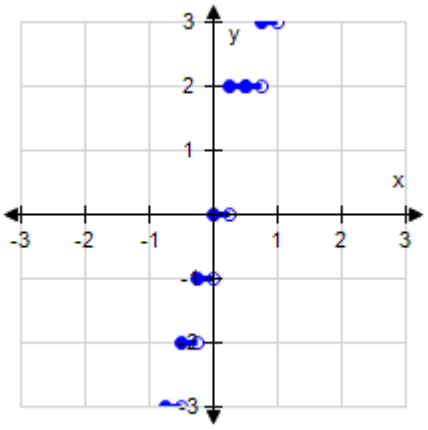
b.

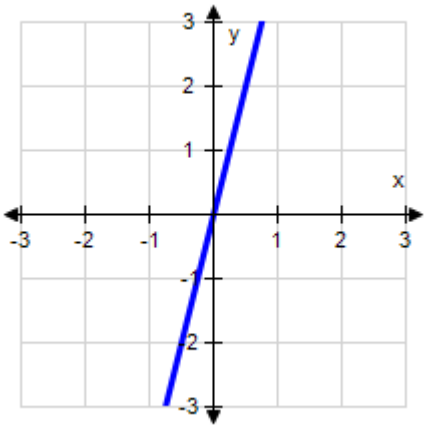


c.

d.

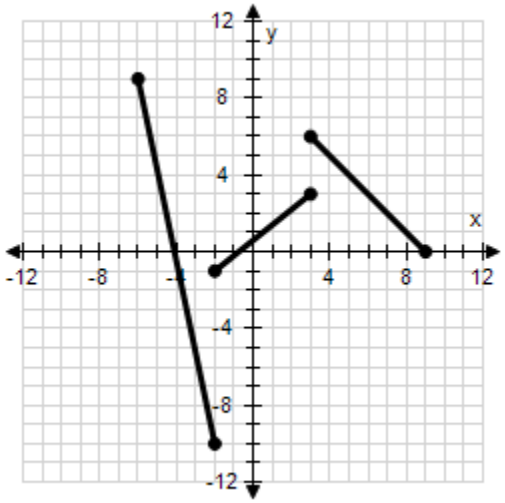
Section 1.5 - Analyzing Graphs of Functions





ANSWER: a
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/1/2014 8:43 AM

57. The graph of the function is sketched as follows:



Determine the interval where the function is increasing.
ANSWER: $[-2, 3]$
POINTS: 1
QUESTION TYPE: Subjective Short Answer
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/1/2014 10:01 AM

Section 1.6 - A Library of Parent Functions

1. Identify the following function.

$f(x) = 8$

a. Constant function
b. Absolute value function
c. Square root function
d. Squaring function
e. Identity function

ANSWER: a
POINTS: 1
REFERENCES: 2.4.1e
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/26/2014 3:10 AM

2. Select the linear function such that it has the indicated function values.

$f(1) = 8, f(0) = 7$

a. $f(x) = 4x + 7$
b. $f(x) = x + 7$
c. $f(x) = 7x - 3$
d. $f(x) = x - 7$
e. $f(x) = -7x - 7$

ANSWER: b
POINTS: 1
REFERENCES: 2.4.11a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/26/2014 3:40 AM

3. Select the linear function such that it has the indicated function values.

$f(8) = 16, f(-3) = -17$

a. $f(x) = 3x - 8$
b. $f(x) = -3x + 3$
c. $f(x) = 3x + 8$
d. $f(x) = 8x + 3$
e. $f(x) = -3x - 3$

ANSWER: a

Section 1.6 - A Library of Parent Functions

POINTS: 1
REFERENCES: 2.4.14a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/24/2014 6:16 AM

4. Select the linear function such that it has the indicated function values.

$f(-4) = -2, f(4) = -2$

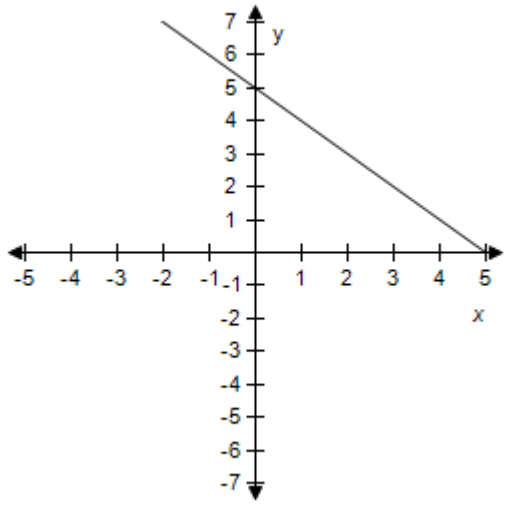
a. $f(x) = -x$
b. $f(x) = 2$
c. $f(x) = -2$
d. $f(x) = 4$
e. $f(x) = x$

ANSWER: c
POINTS: 1
REFERENCES: 2.4.15a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 10:54 AM

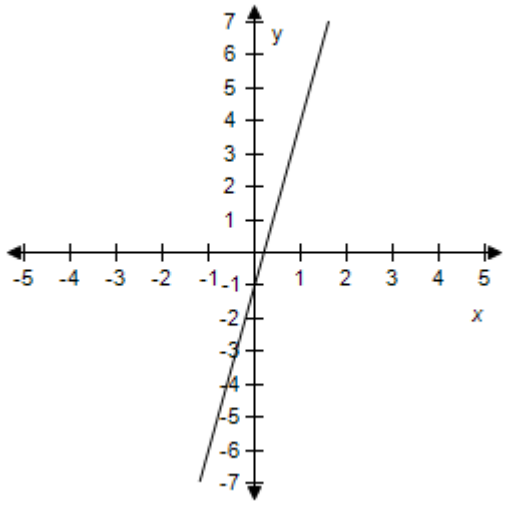
5. Select the correct graph of the given function.

$f(x) = -x + 5$

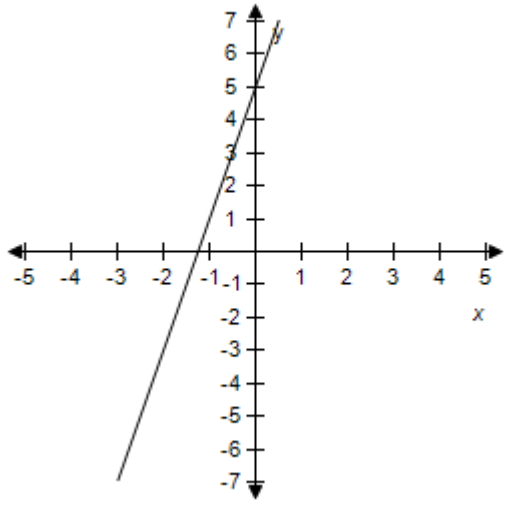
a.



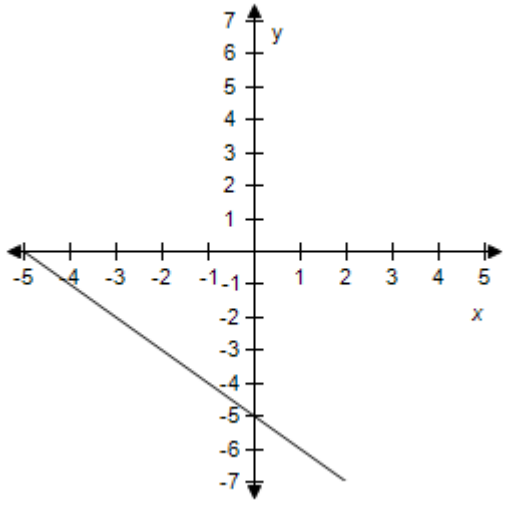
b.



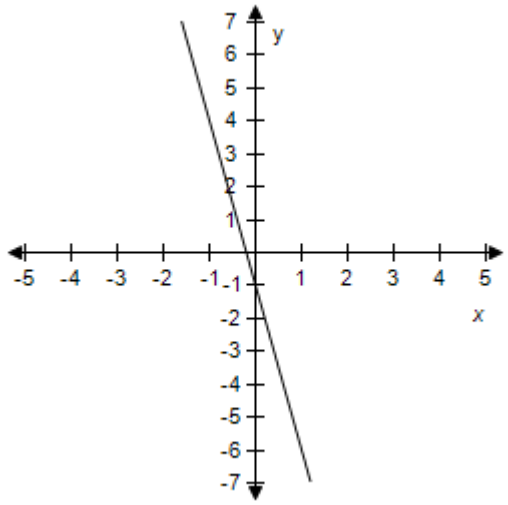
c.



d.



e.



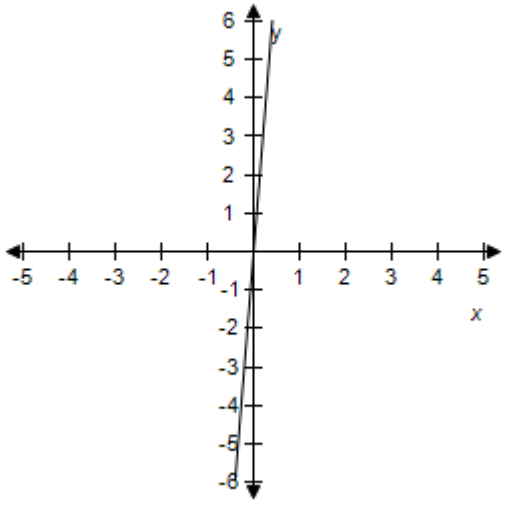
ANSWER: a
POINTS: 1
REFERENCES: 2.4.19
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/26/2014 4:10 AM

6. Select the correct graph of the given function.

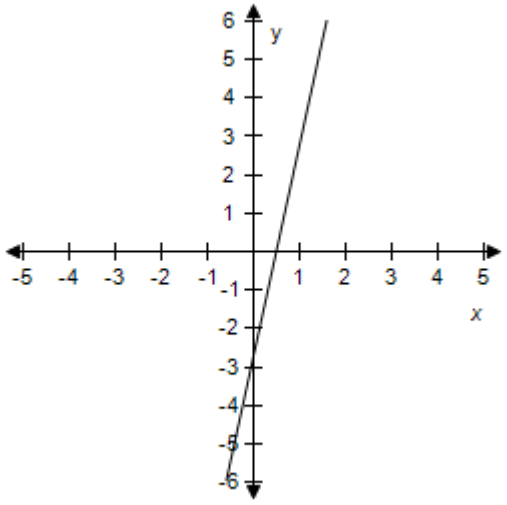
$f(x) = 2.7x - 5.5$

Section 1.6 - A Library of Parent Functions

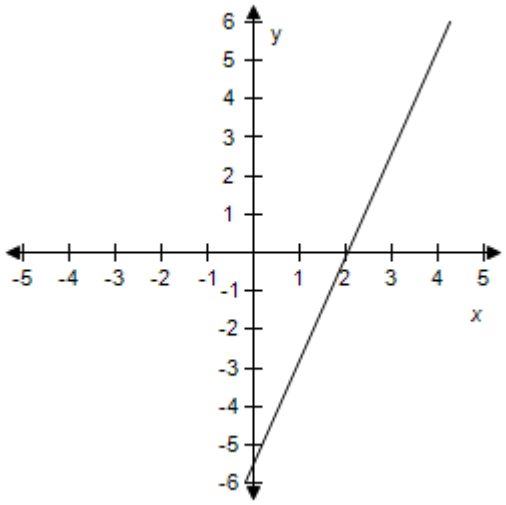
a.



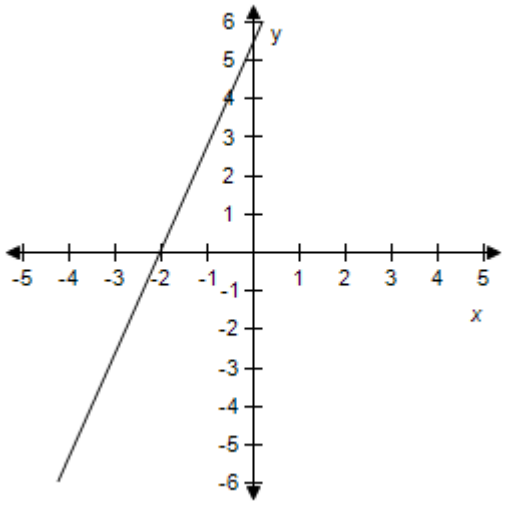
b.



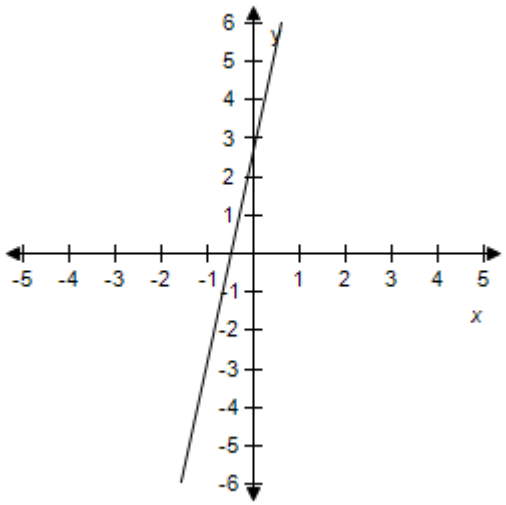
c.



d.



e.



ANSWER: c

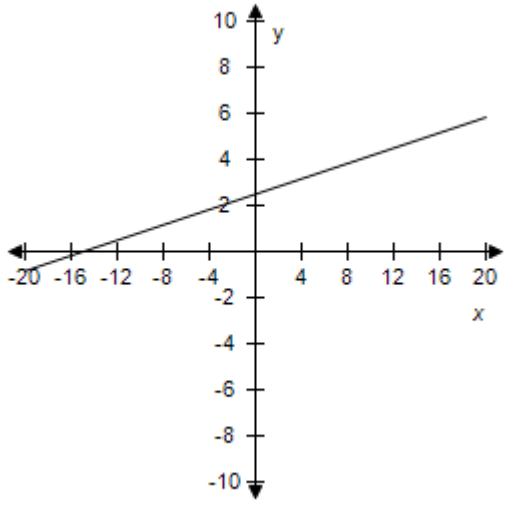
Section 1.6 - A Library of Parent Functions

POINTS: 1
REFERENCES: 2.4.20
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 9:32 AM

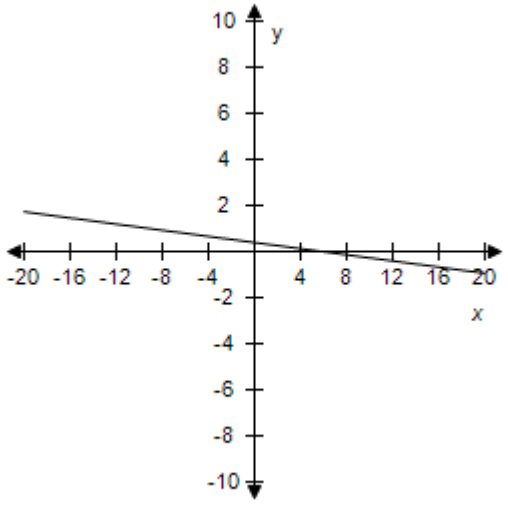
7. Select the correct graph of the given function.

$$f(x) = -\frac{1}{6}x - \frac{5}{2}$$

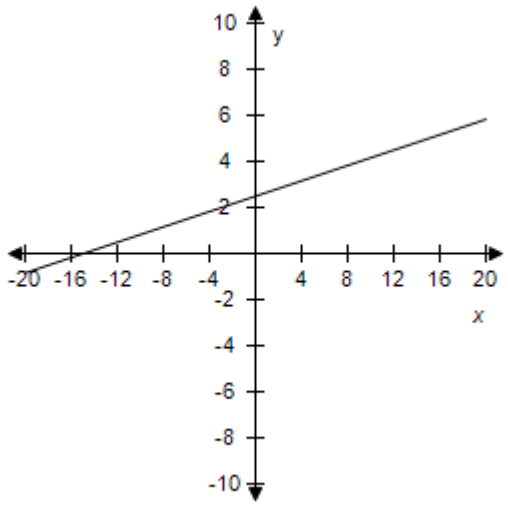
a.



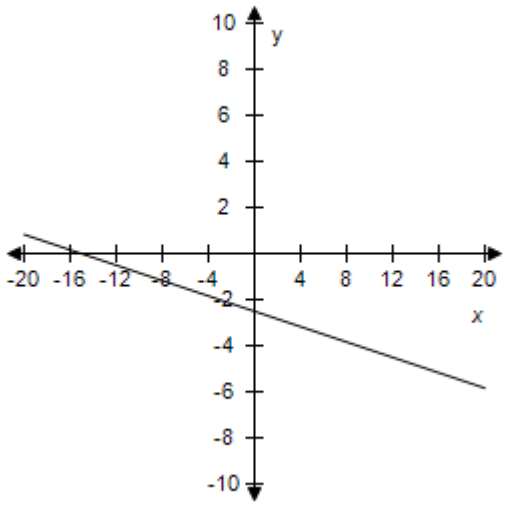
b.



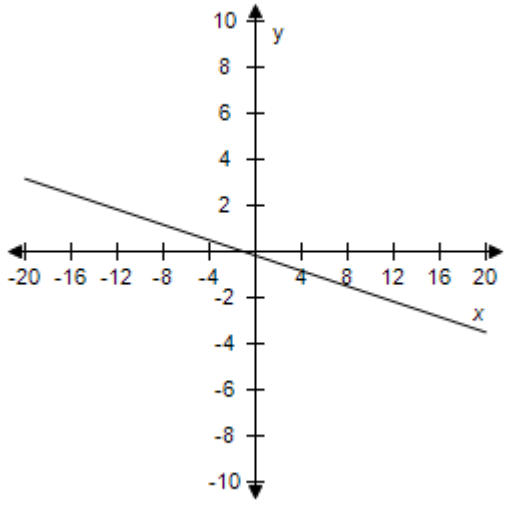
c.



d.



e.

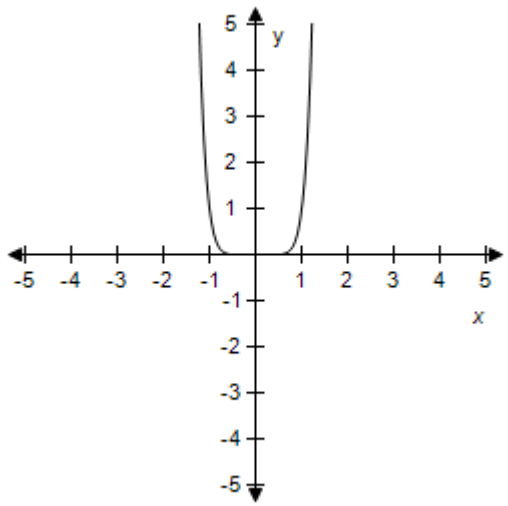


ANSWER: d
POINTS: 1
REFERENCES: 2.4.21
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 9:35 AM

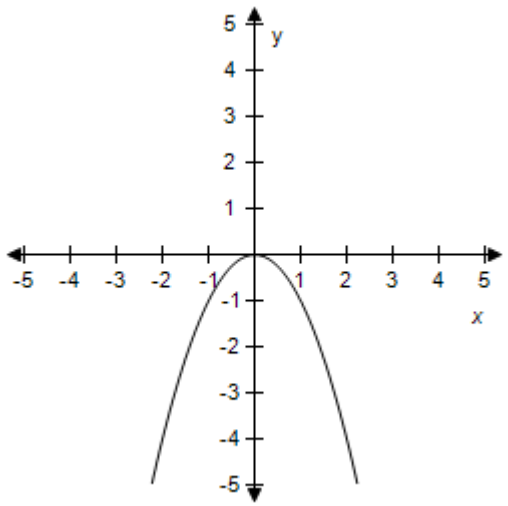
8. Select the correct graph of the given function.

$f(x) = -3x^3$

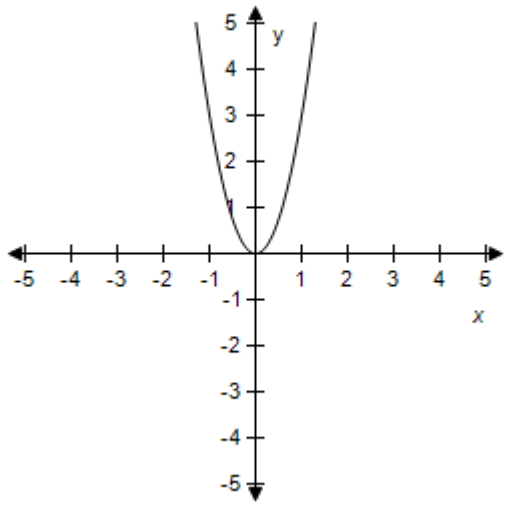
a.



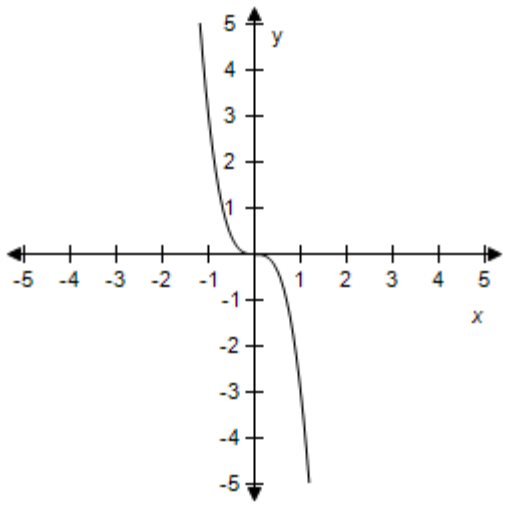
b.



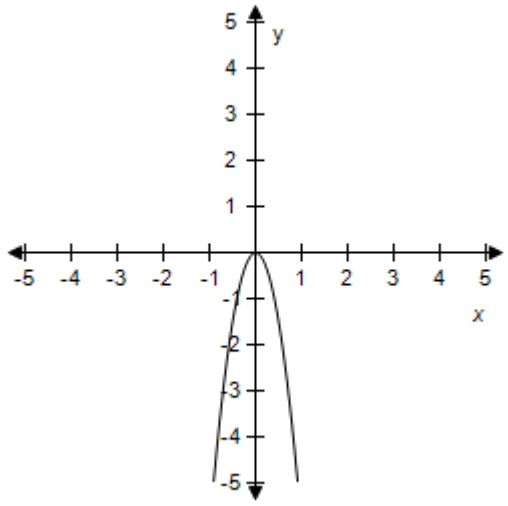
c.



d.



e.



ANSWER: d
POINTS: 1
REFERENCES: 2.4.23
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/26/2014 4:49 AM

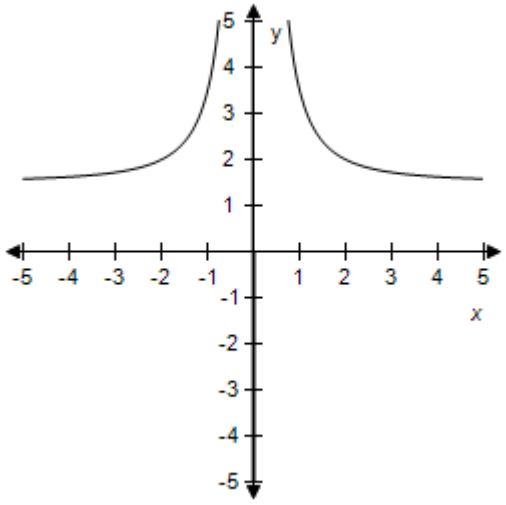
9. Select the correct graph of the given function.

$f(x) = 1.5 - 2x^2$

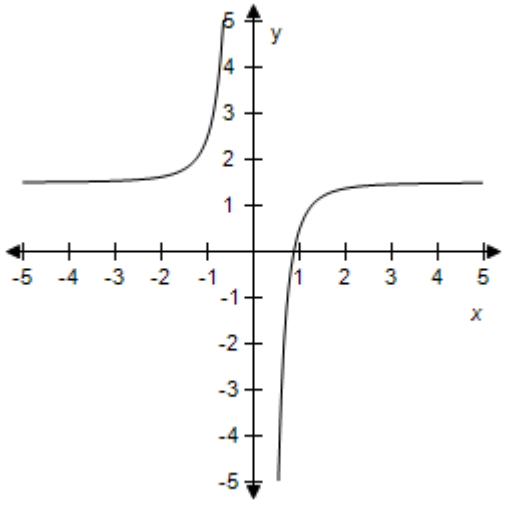
a.

b.

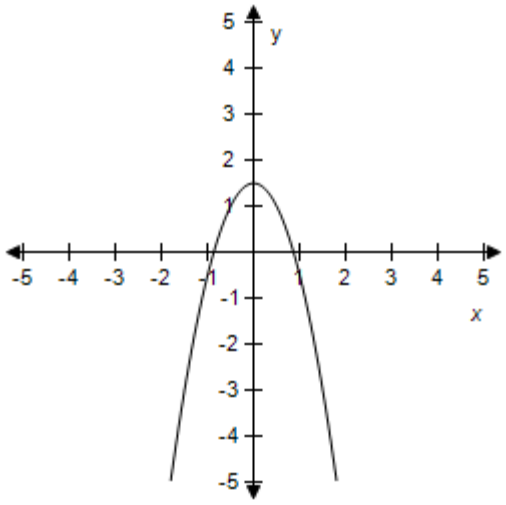
Section 1.6 - A Library of Parent Functions



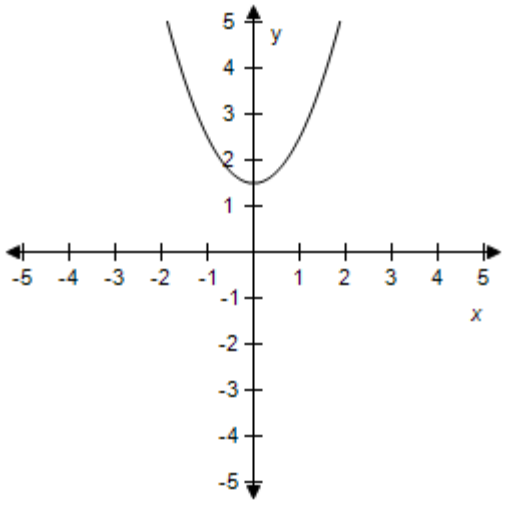
c.

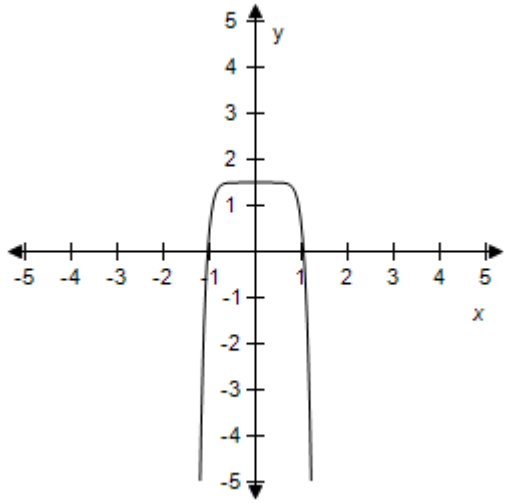


d.



e.



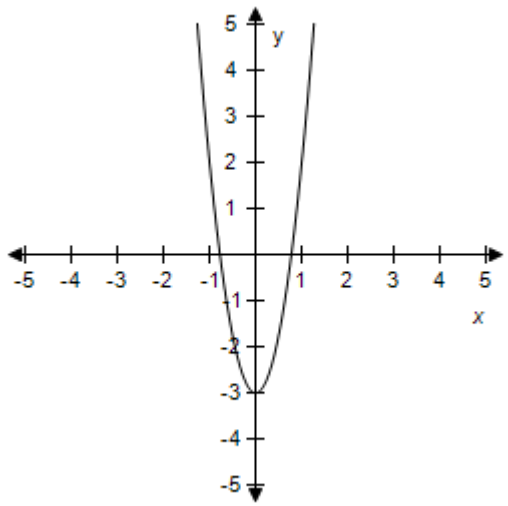


ANSWER: c
POINTS: 1
REFERENCES: 2.4.24
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/26/2014 5:02 AM

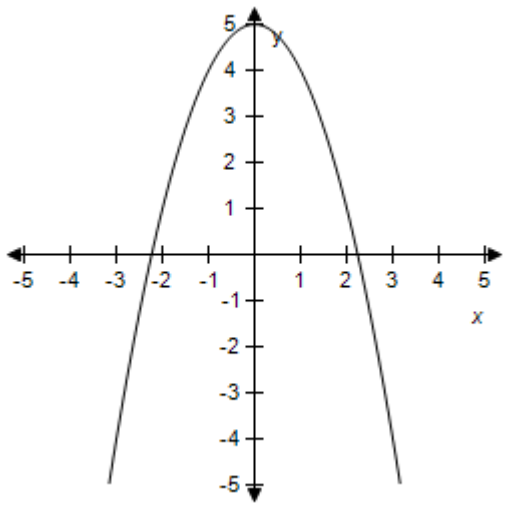
10. Select the correct graph of the given function.

$f(x) = 5x^2 - 1$

a.

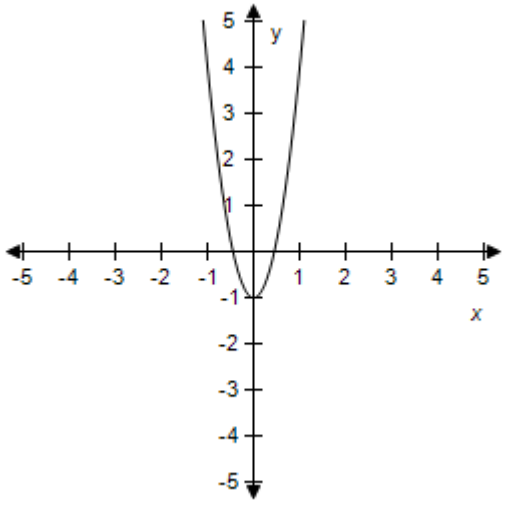


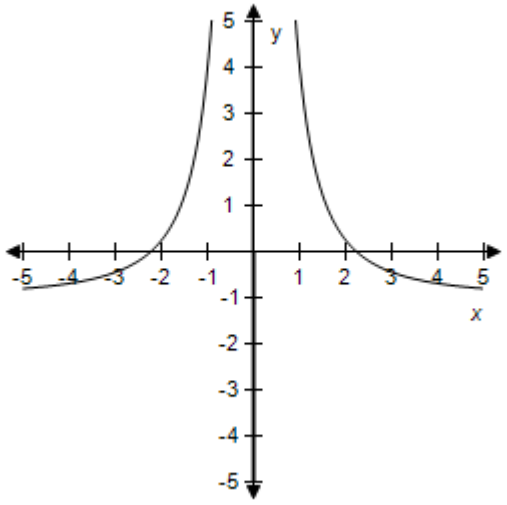
b.



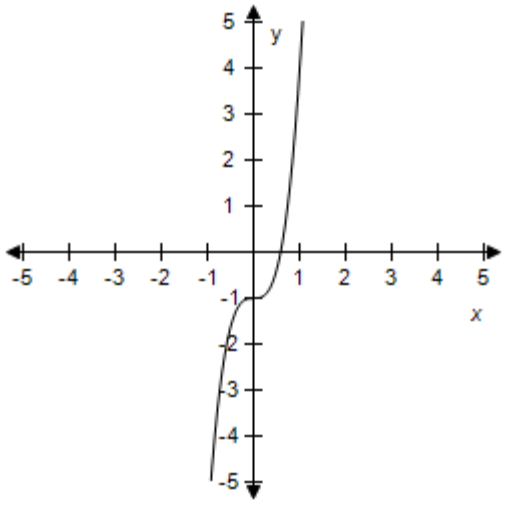
c.

d.





e.



ANSWER: c
POINTS: 1
REFERENCES: 2.4.25
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/24/2014 7:28 AM

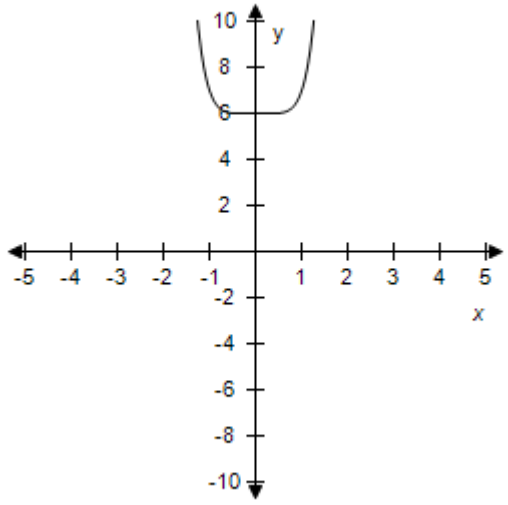
11. Select the correct graph of the given function.

$f(x) = x^6 - 6$

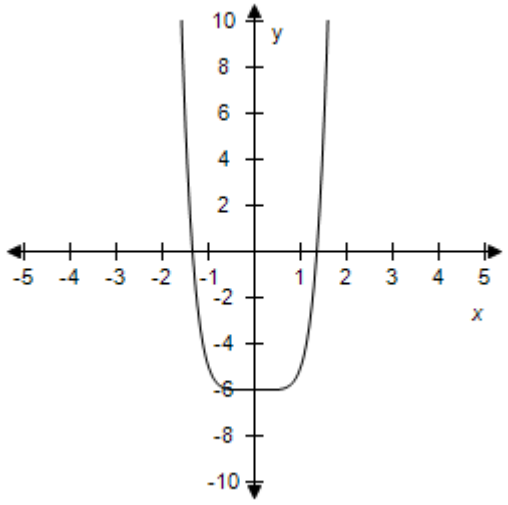
a.

b.

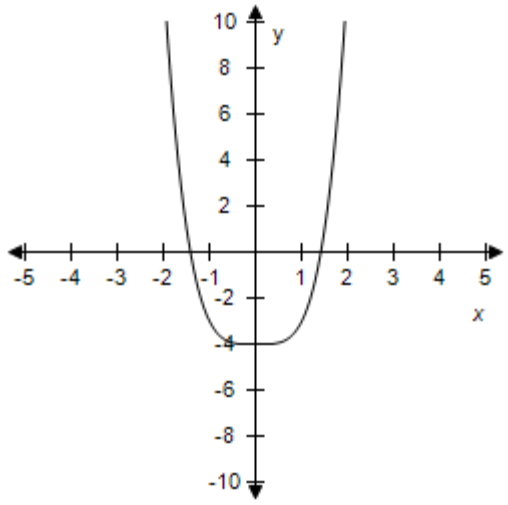
Section 1.6 - A Library of Parent Functions



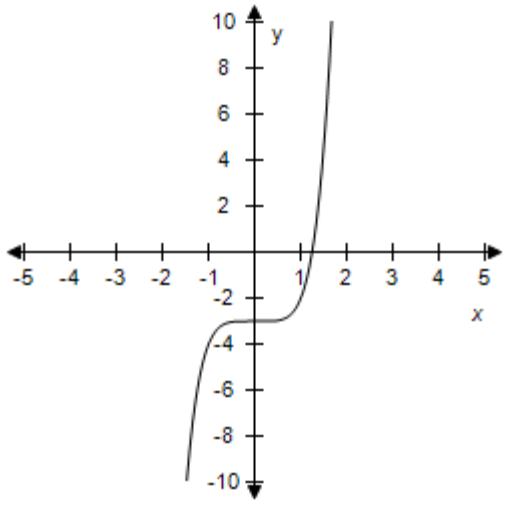
c.



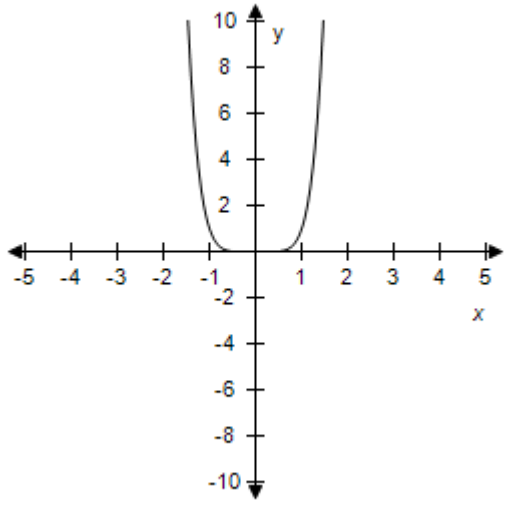
d.



e.



Section 1.6 - A Library of Parent Functions

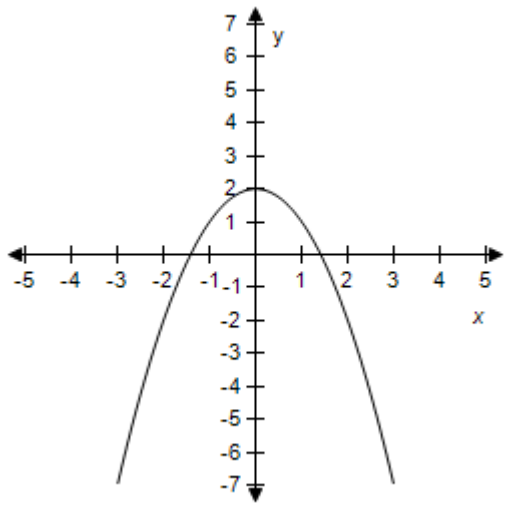


ANSWER: b
POINTS: 1
REFERENCES: 2.4.27
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/26/2014 5:33 AM

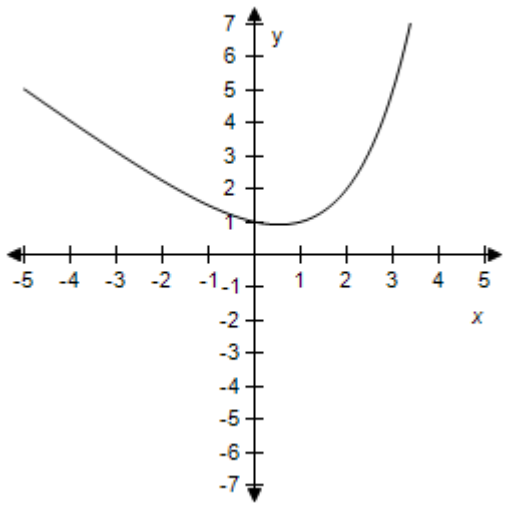
12. Select the correct graph of the given function.

$f(x) = 2 - x^2$

a.

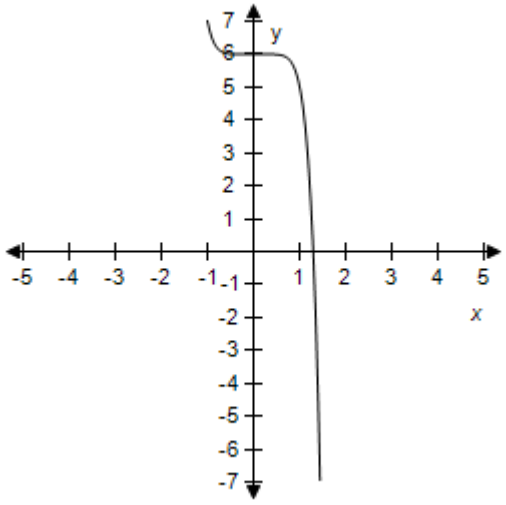


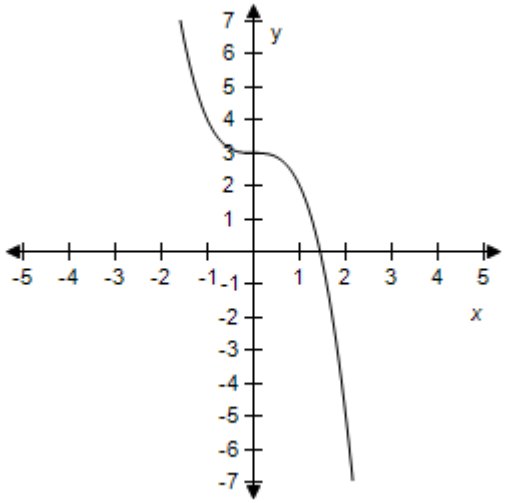
b.



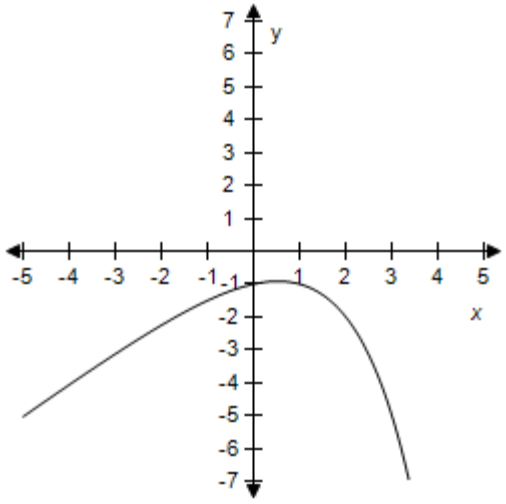
c.

d.





e.



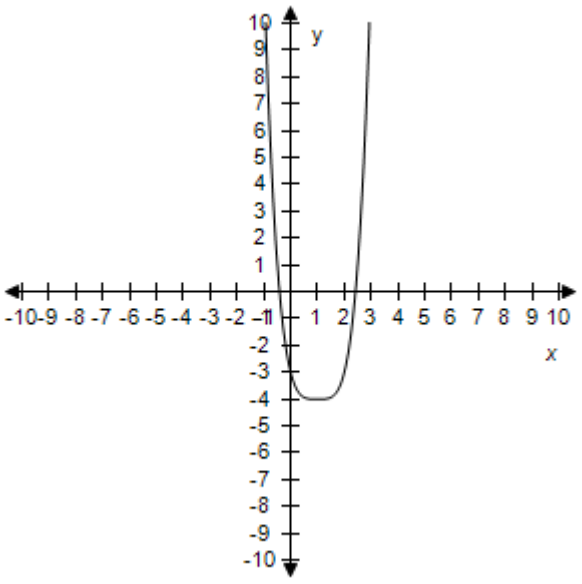
ANSWER: a
POINTS: 1
REFERENCES: 2.4.28
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/26/2014 5:41 AM

13. Select the correct graph of the given function.

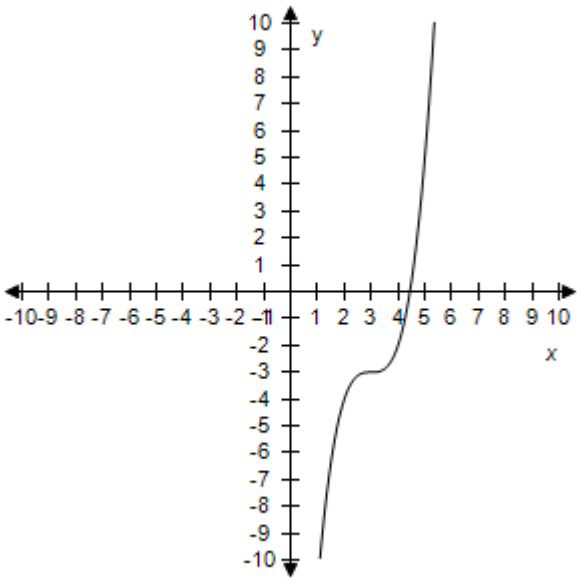
$f(x) = (x-3)^3 - 3$

a.

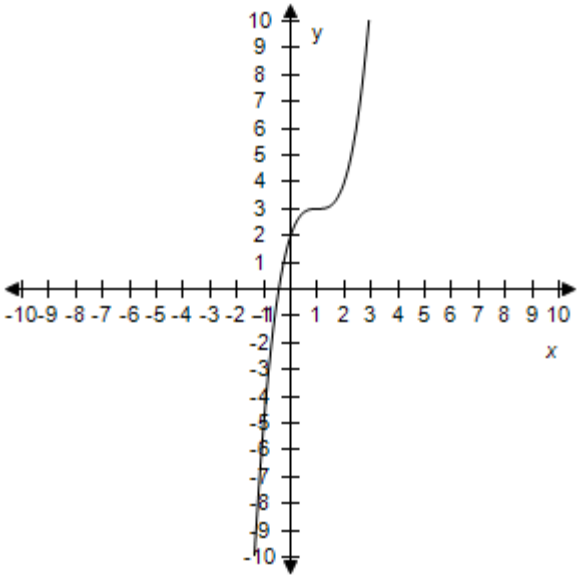
b.



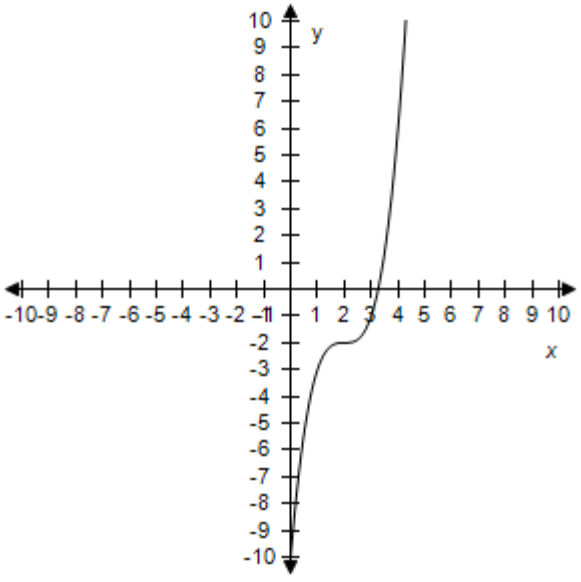
c.



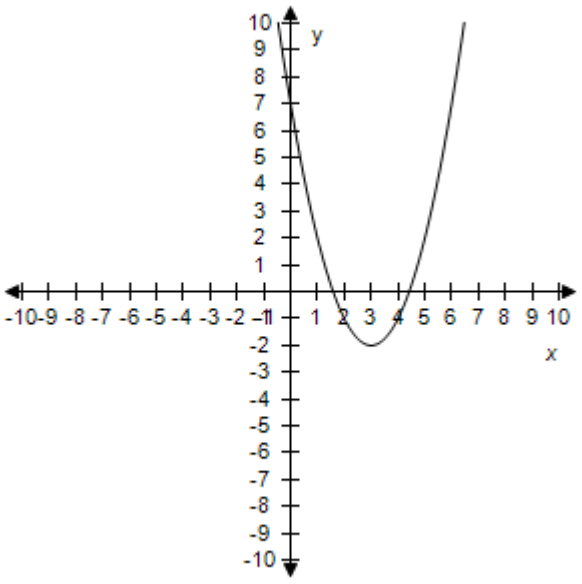
d.



e.



Section 1.6 - A Library of Parent Functions

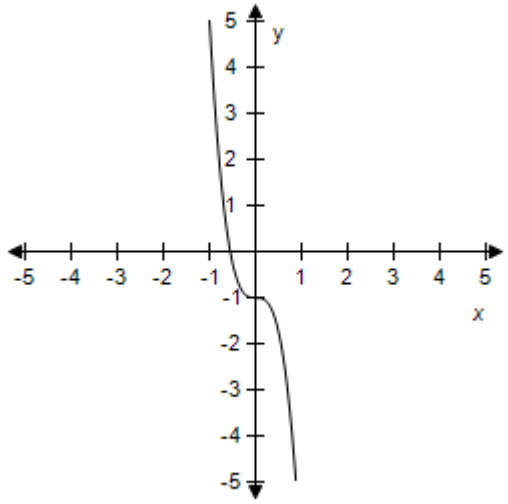


ANSWER: b
POINTS: 1
REFERENCES: 2.4.29
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/26/2014 6:11 AM

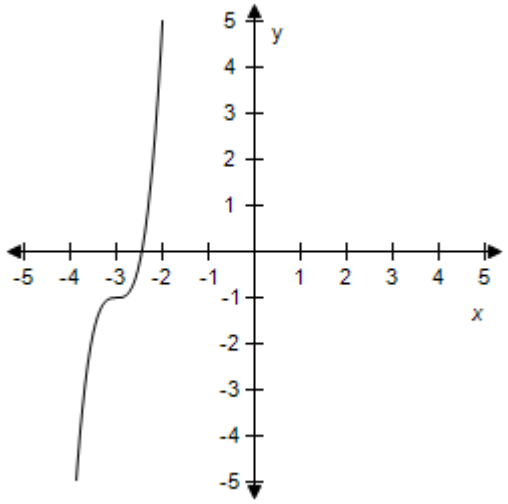
14. Select the correct graph for the given function.

$f(x) = 6(x+3)^3 - 1$

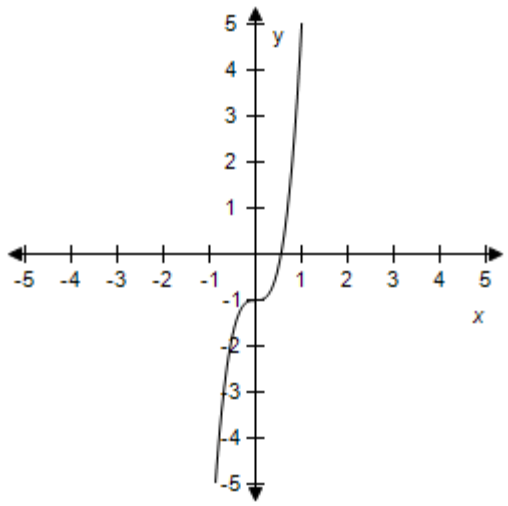
a.



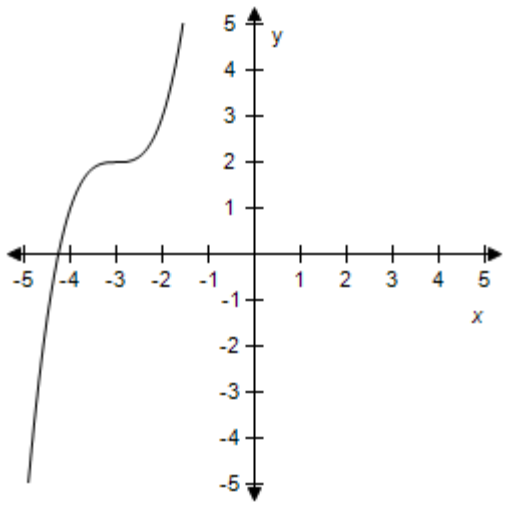
b.



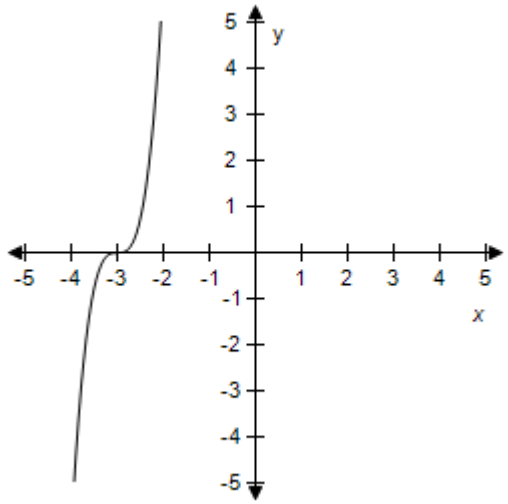
c.



d.



e.



ANSWER: b
POINTS: 1
REFERENCES: 2.4.30
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 9:45 AM

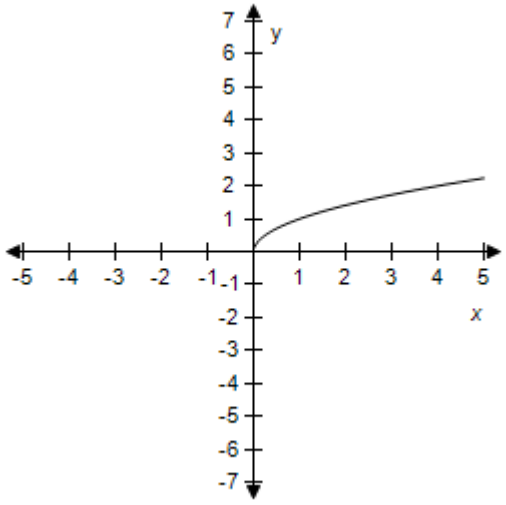
15. Select the correct graph for the given function.

$f(x) = 2\sqrt{x}$

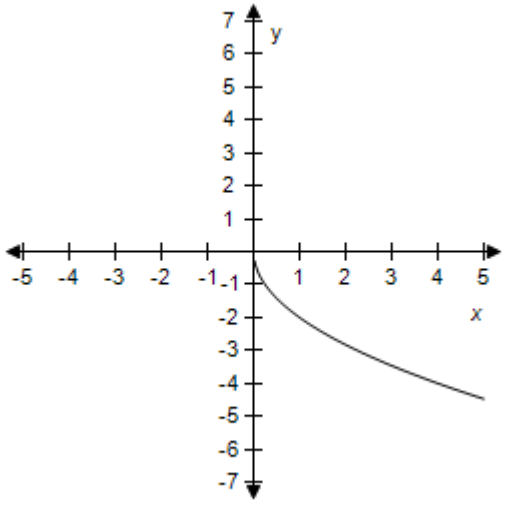
a.

b.

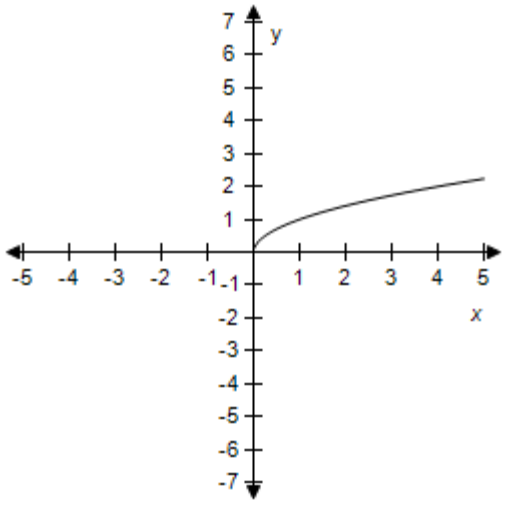
c.

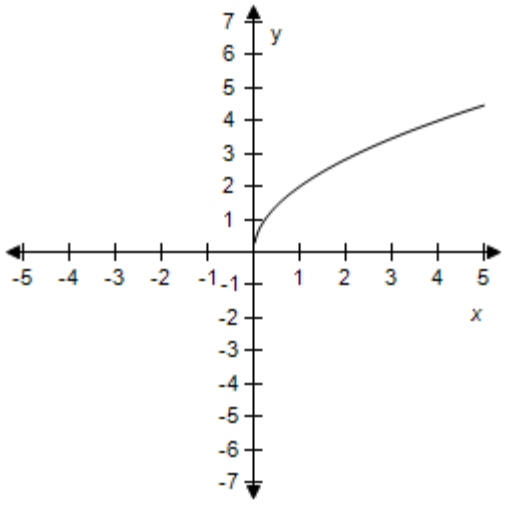


d.

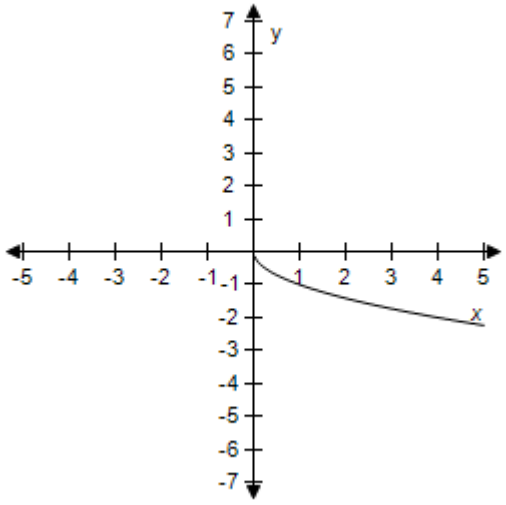


e.





Section 1.6 - A Library of Parent Functions

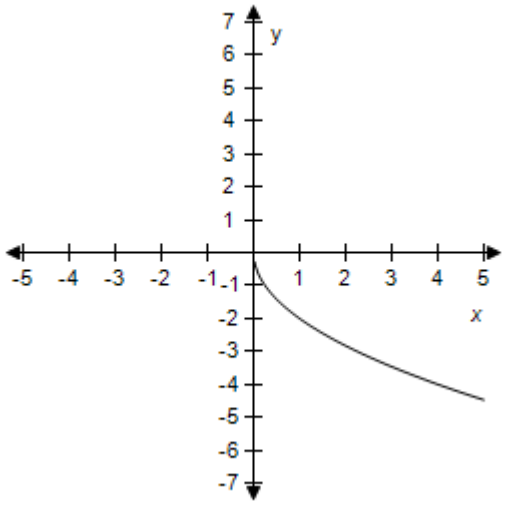


ANSWER: d
POINTS: 1
REFERENCES: 2.4.31
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 9:48 AM

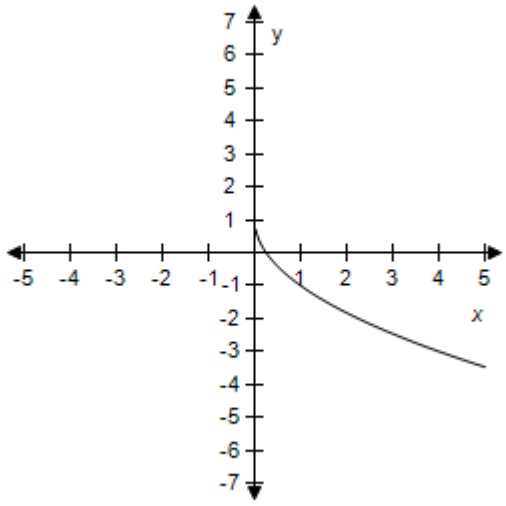
16. Select the correct graph of the given function.

$f(x) = 1 - 2\sqrt{x}$

a.

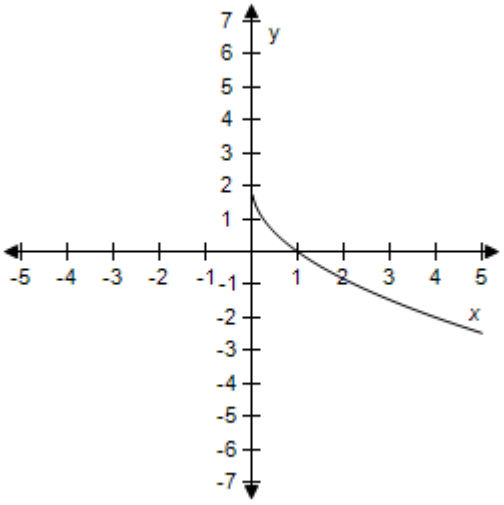


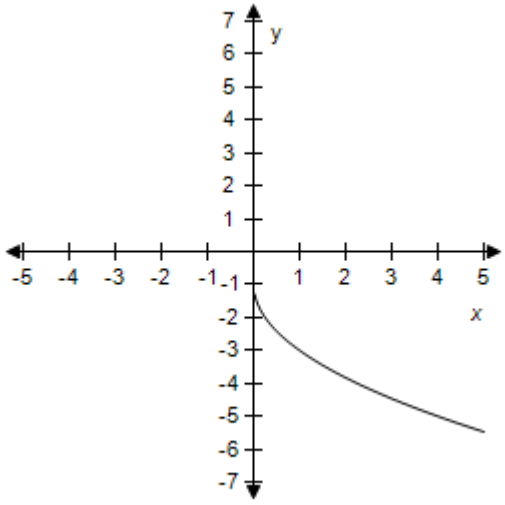
b.



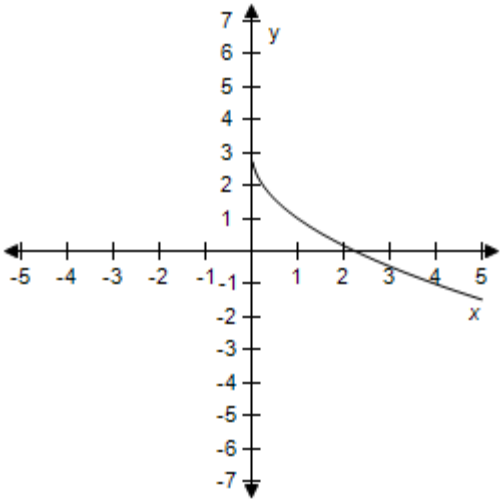
c.

d.





e.



ANSWER: b
POINTS: 1
REFERENCES: 2.4.32
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/26/2014 6:43 AM

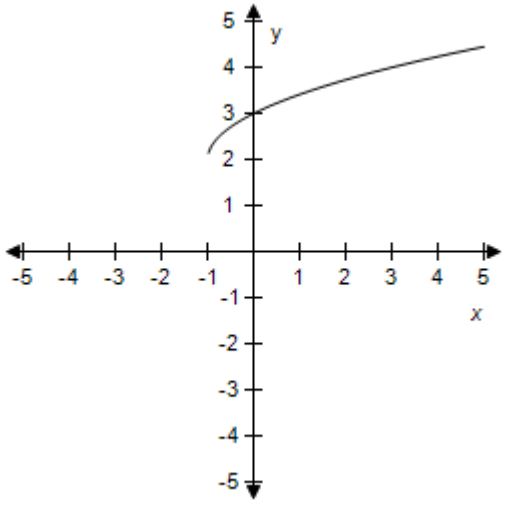
17. Select the correct graph of the given function.

$f(x) = \sqrt{x+1} + 2$

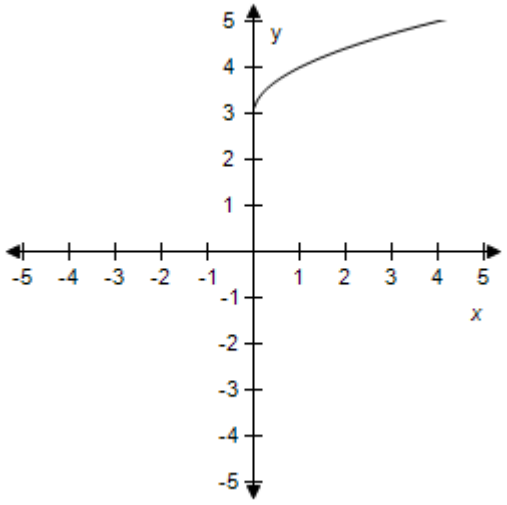
a.

b.

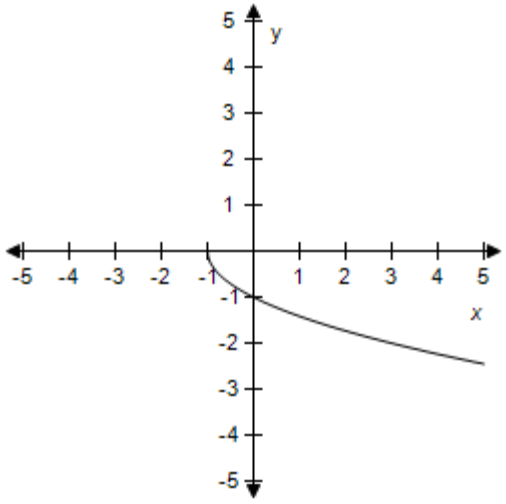
c.

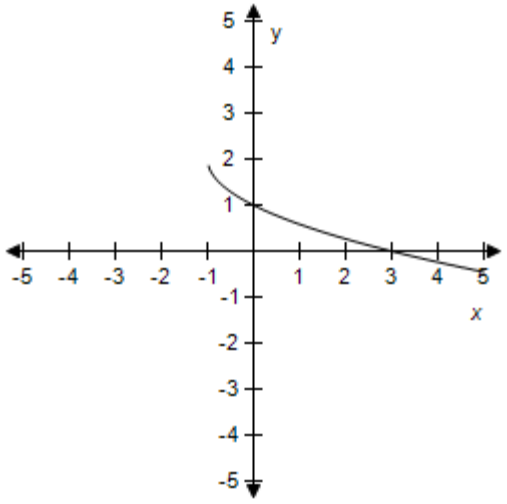


d.

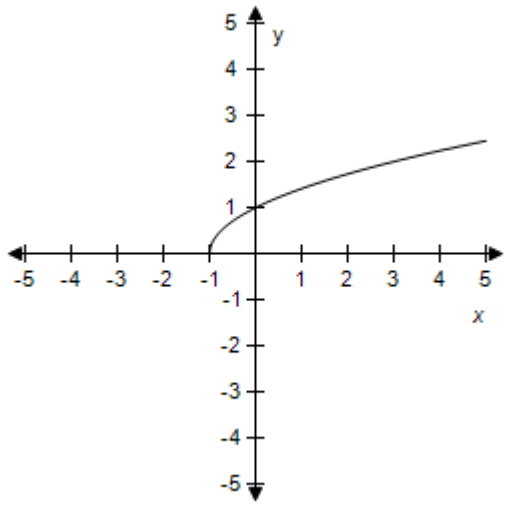


e.





Section 1.6 - A Library of Parent Functions

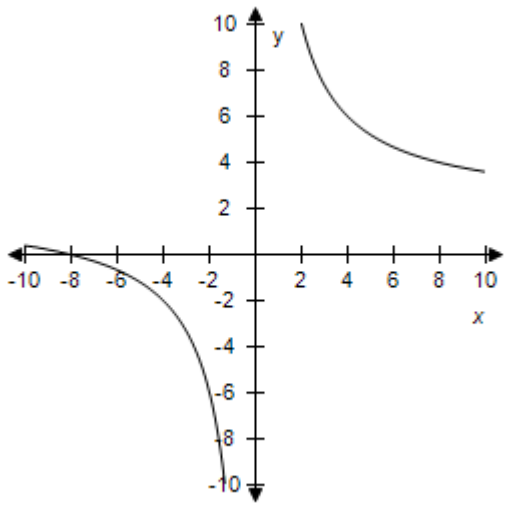


ANSWER: a
POINTS: 1
REFERENCES: 2.4.34
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/26/2014 7:00 AM

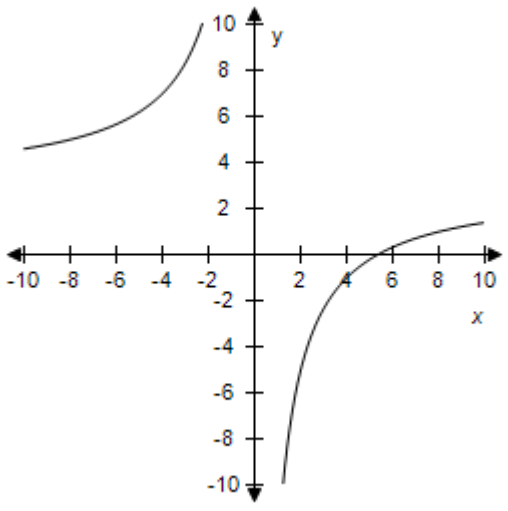
18. Select the correct graph of the given function.

$$f(x) = -\frac{8}{x}$$

a.



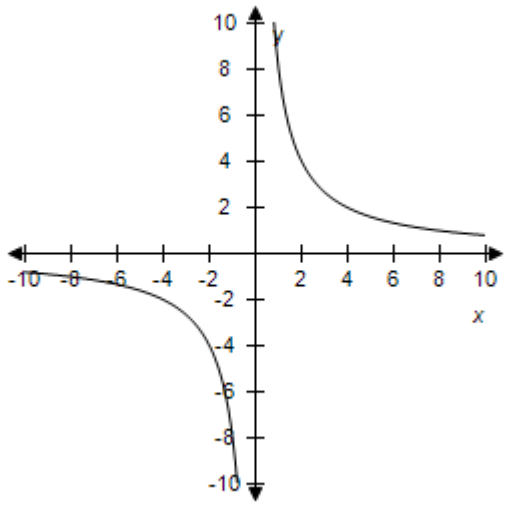
b.

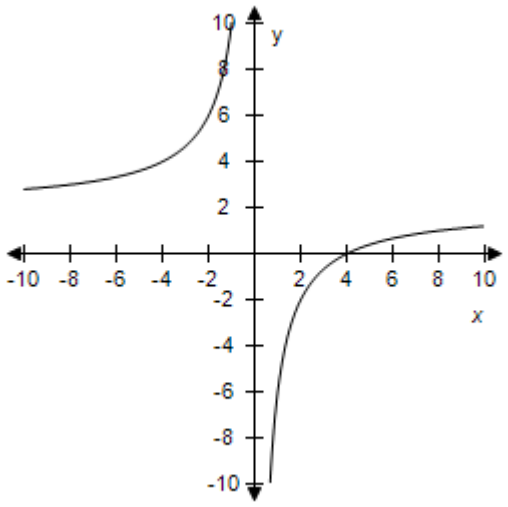


c.

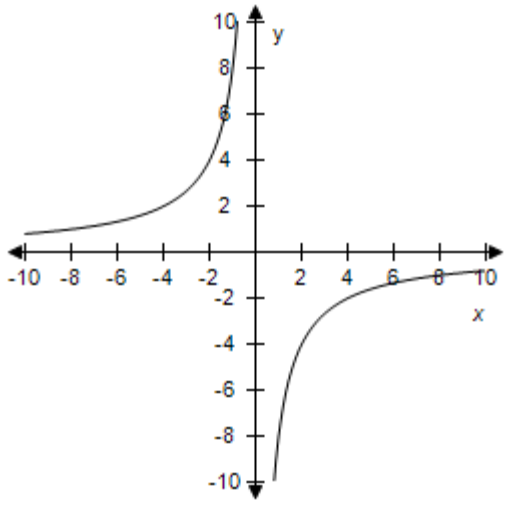
d.

Section 1.6 - A Library of Parent Functions





e.



ANSWER: e
POINTS: 1
REFERENCES: 2.4.35
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/26/2014 7:38 AM

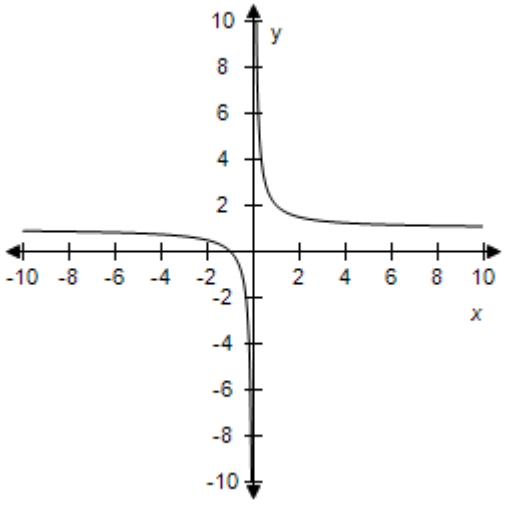
19. Select the correct graph of the given function.

$$f(x) = 1 + \frac{1}{x}$$

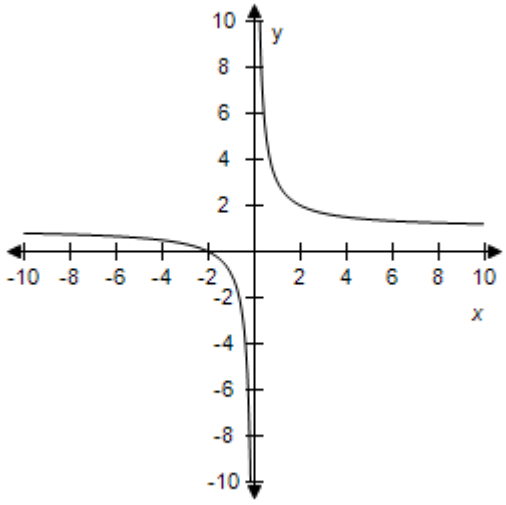
a.

b.

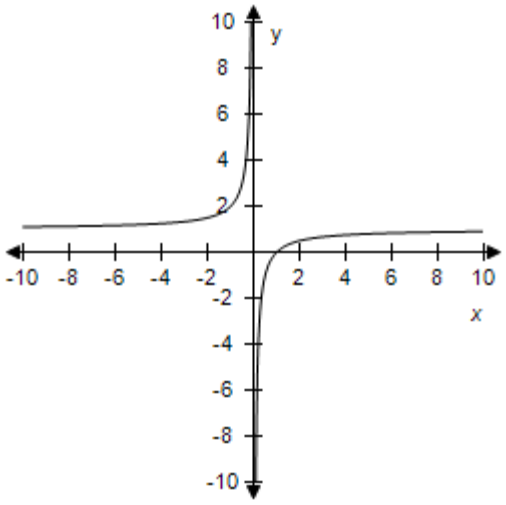
c.



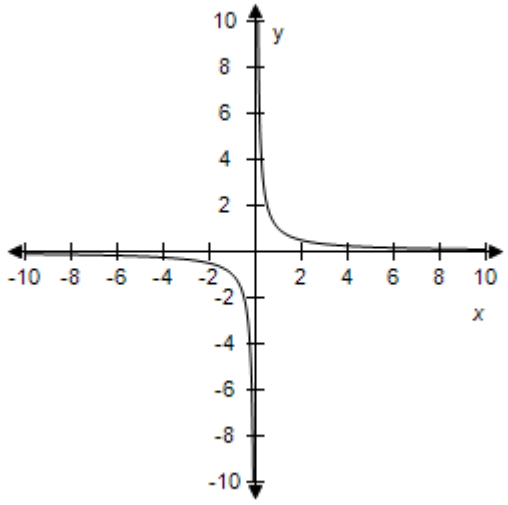
d.



e.



Section 1.6 - A Library of Parent Functions

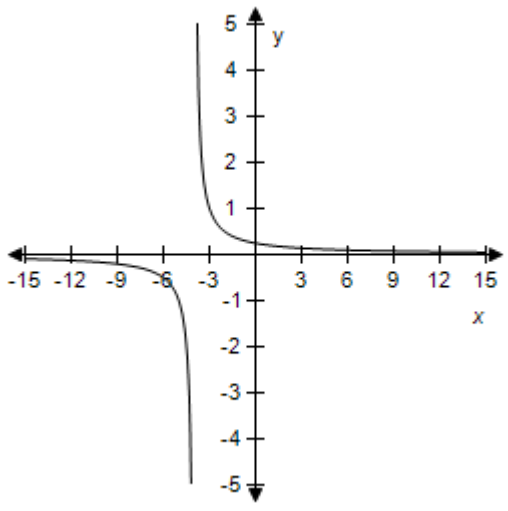


ANSWER: a
POINTS: 1
REFERENCES: 2.4.36
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 9:53 AM

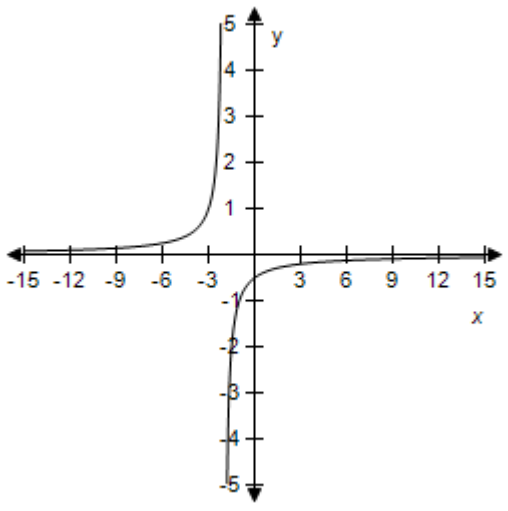
20. Select the correct graph of the given function.

$$f(x) = \frac{1}{x+1}$$

a.

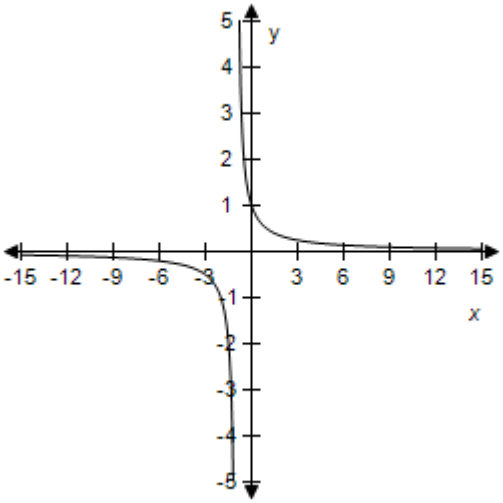


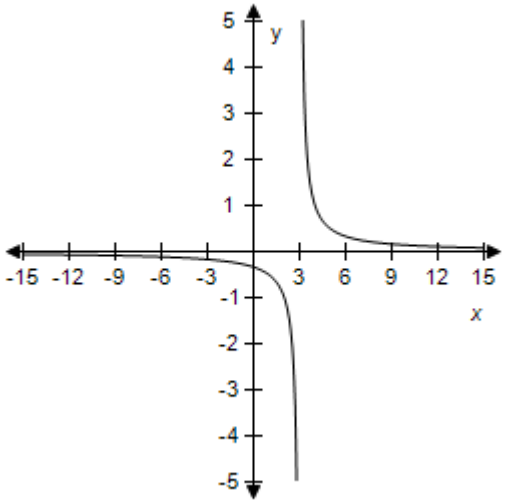
b.



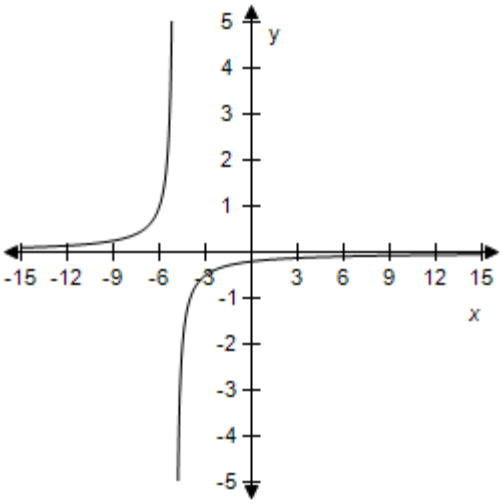
c.

d.





e.



ANSWER: c
POINTS: 1
REFERENCES: 2.4.37
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 9:58 AM

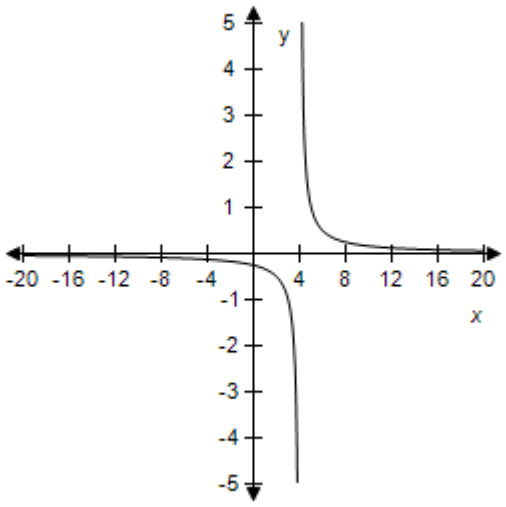
21. Select the correct graph of the given function.

$$f(x) = \frac{1}{x-4}$$

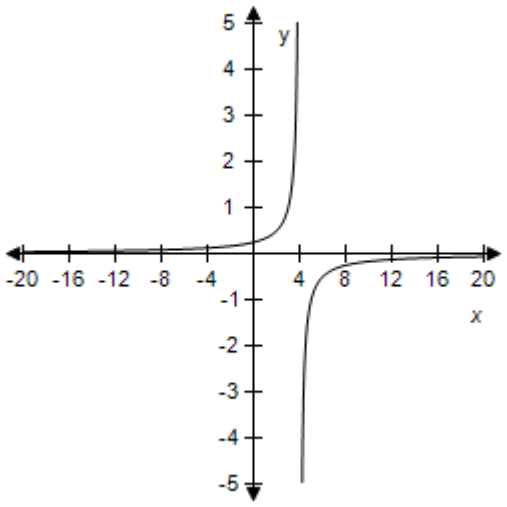
a.

b.

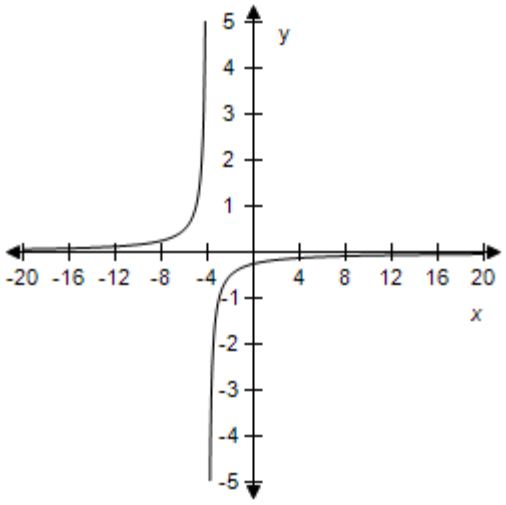
Section 1.6 - A Library of Parent Functions



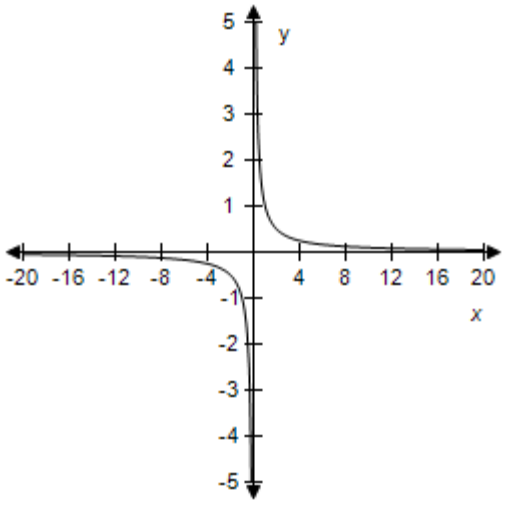
c.



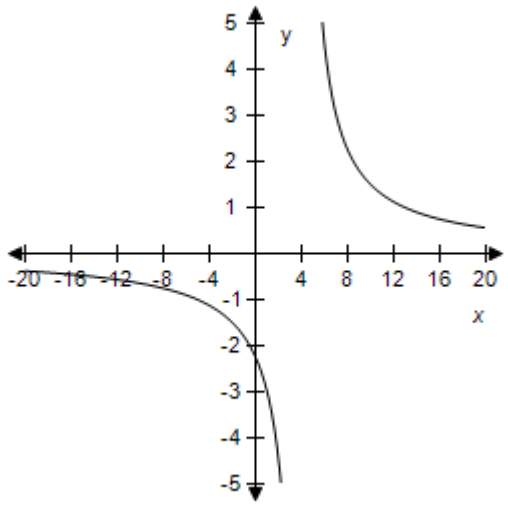
d.



e.



Section 1.6 - A Library of Parent Functions

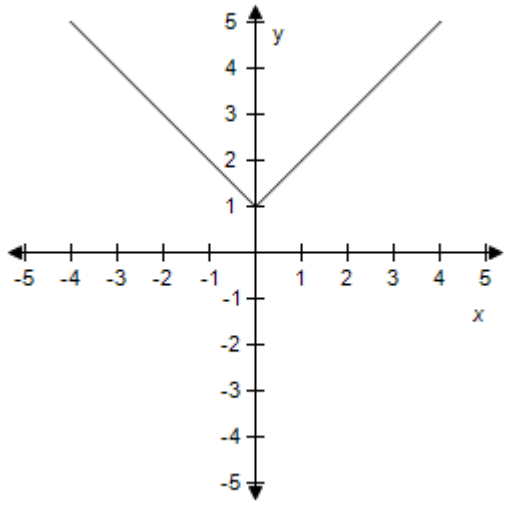


ANSWER: a
POINTS: 1
REFERENCES: 2.4.38
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 10:00 AM

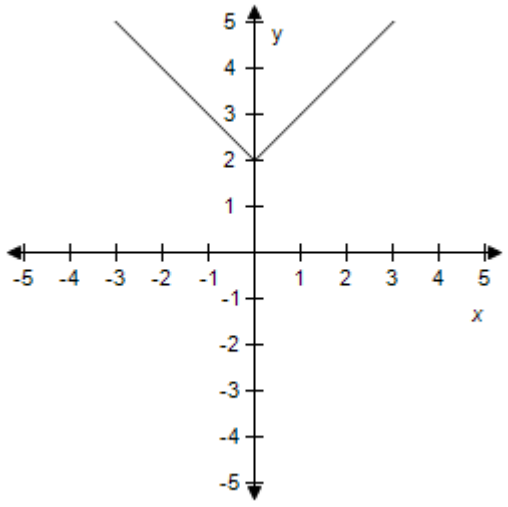
22. Select the correct graph of the given function.

$f(x) = |x| - 2$

a.



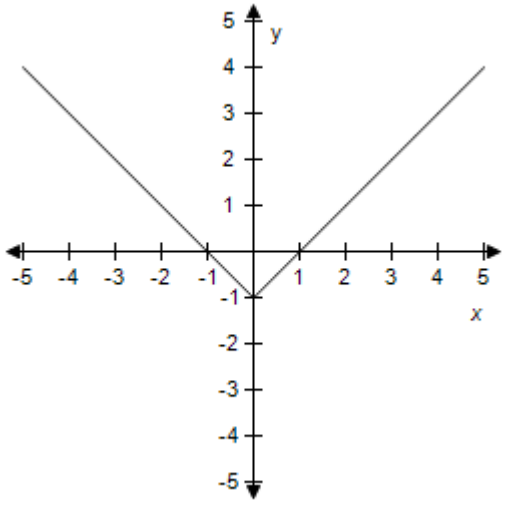
b.

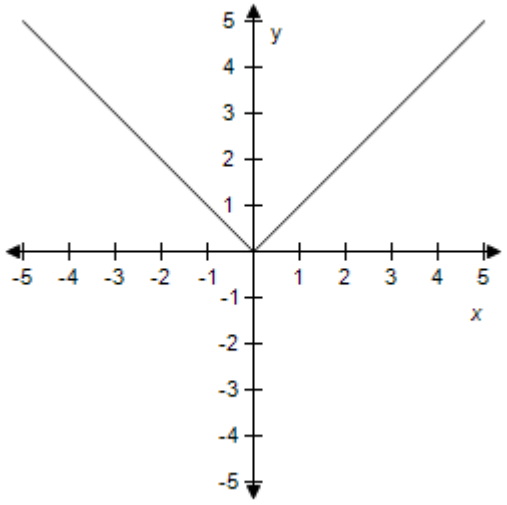


c.

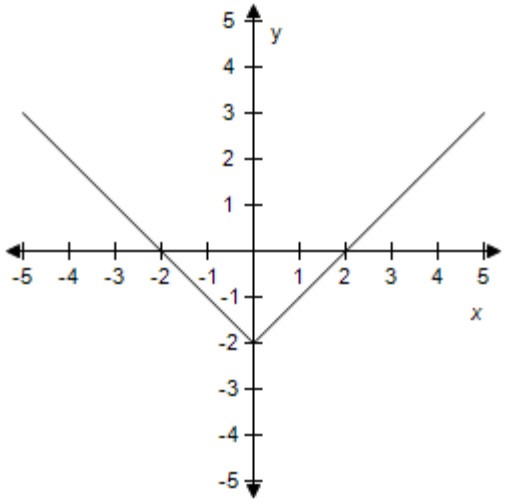
d.

Section 1.6 - A Library of Parent Functions





e.



ANSWER: e
POINTS: 1
REFERENCES: 2.4.39
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/29/2014 1:01 AM

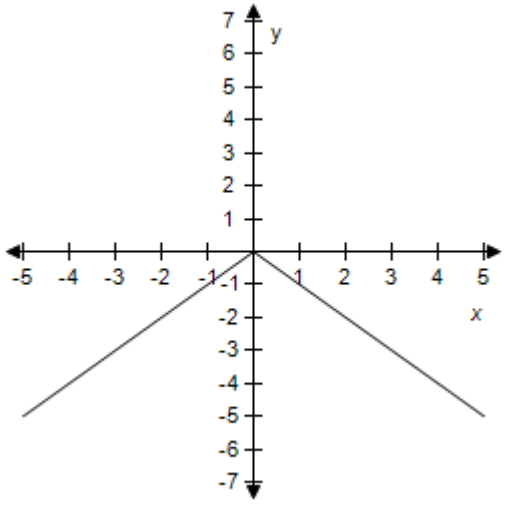
23. Select the correct graph of the given function.

$f(x) = 2 - |x|$

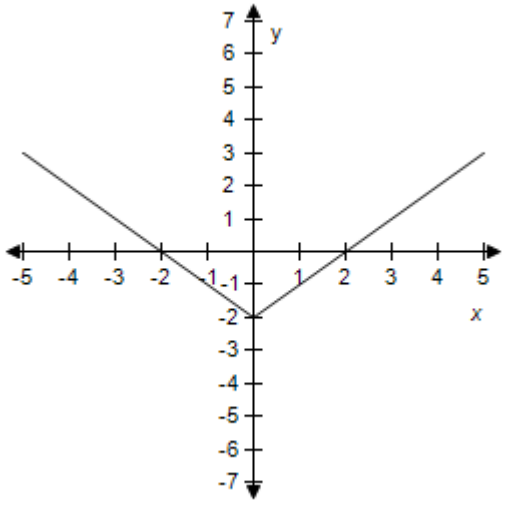
a.

b.

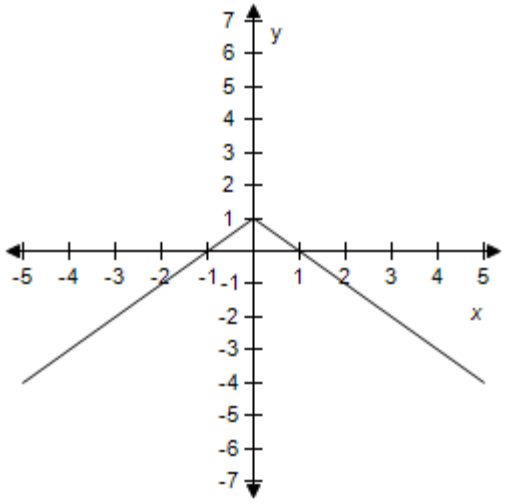
c.

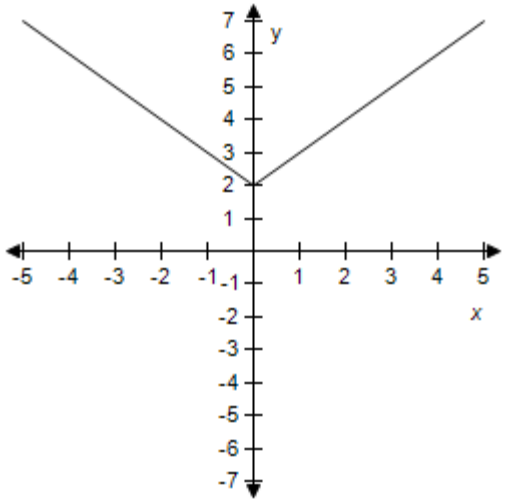


d.

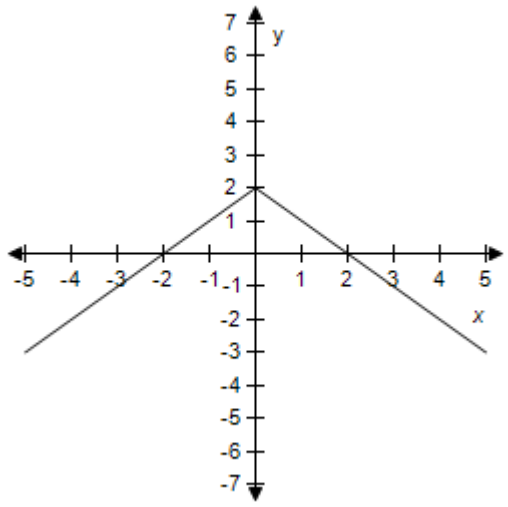


e.





Section 1.6 - A Library of Parent Functions

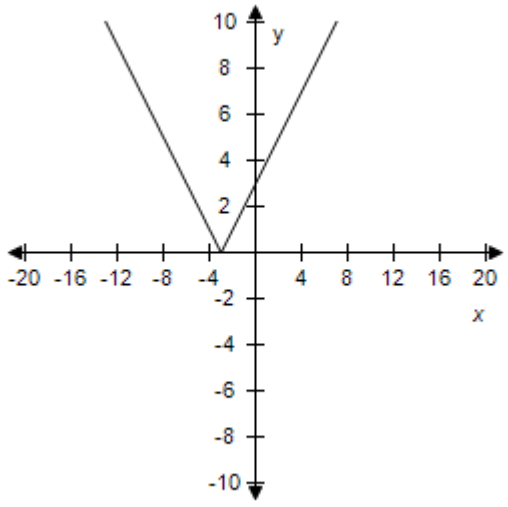


ANSWER: e
POINTS: 1
REFERENCES: 2.4.40
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/29/2014 1:09 AM

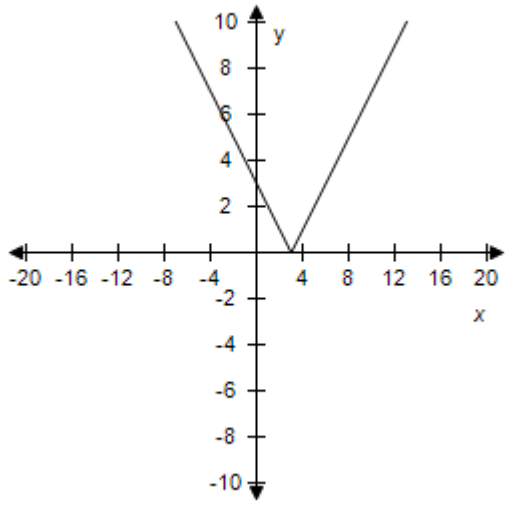
24. Select the correct graph of the given function.

$f(x) = |x+3|$

a.



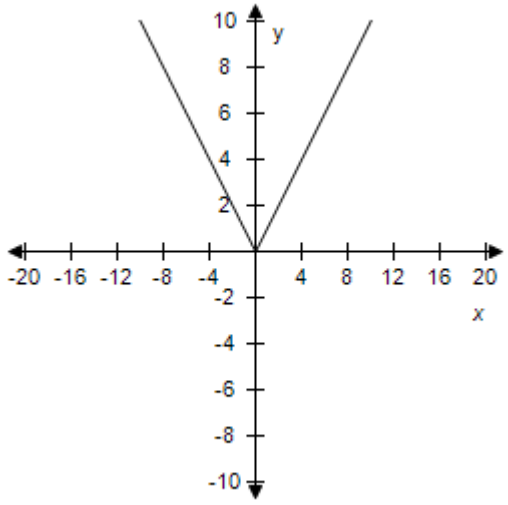
b.

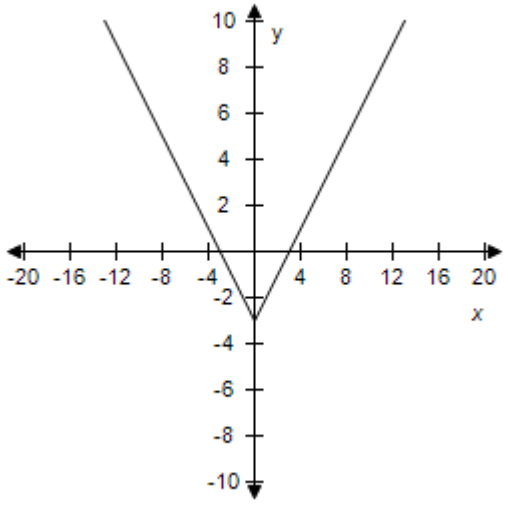


c.

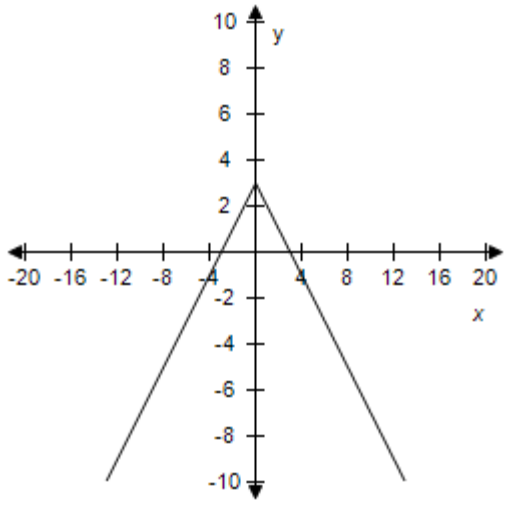
d.

Section 1.6 - A Library of Parent Functions





e.



ANSWER: a
POINTS: 1
REFERENCES: 2.4.41
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 10:02 AM

25. Select the correct graph of the given function.

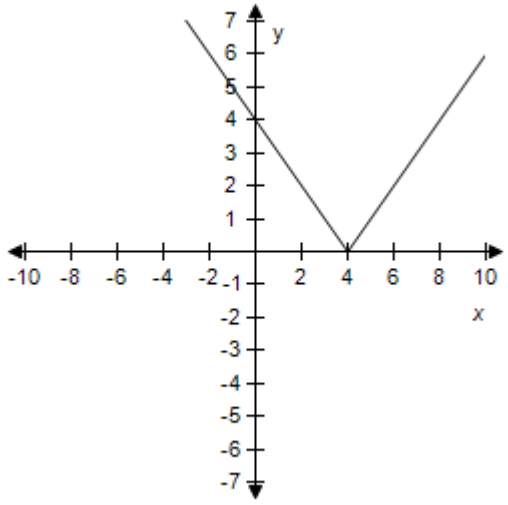
$f(x) = |x - 6|$

a.

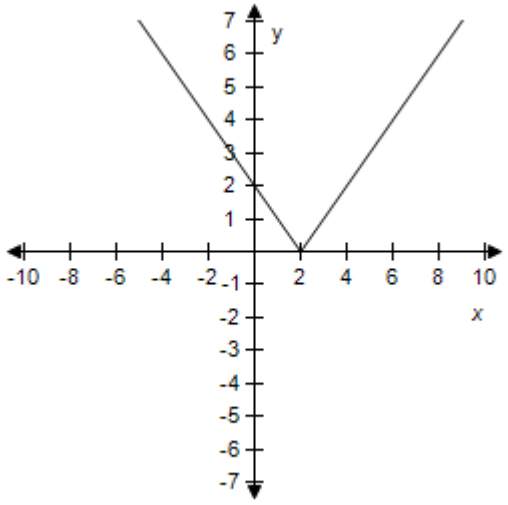
b.

Section 1.6 - A Library of Parent Functions

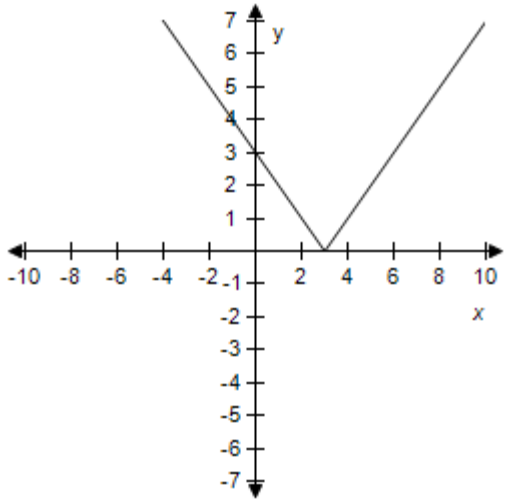
c.

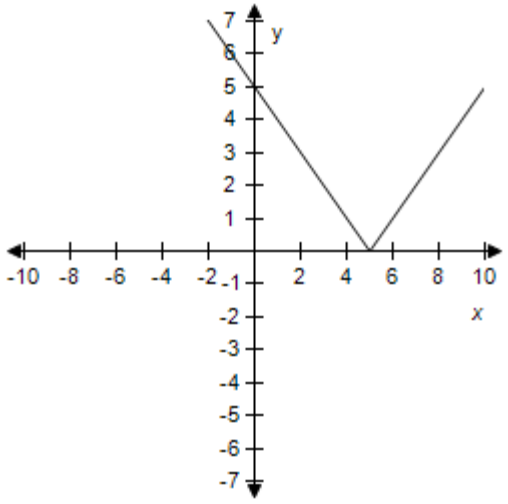


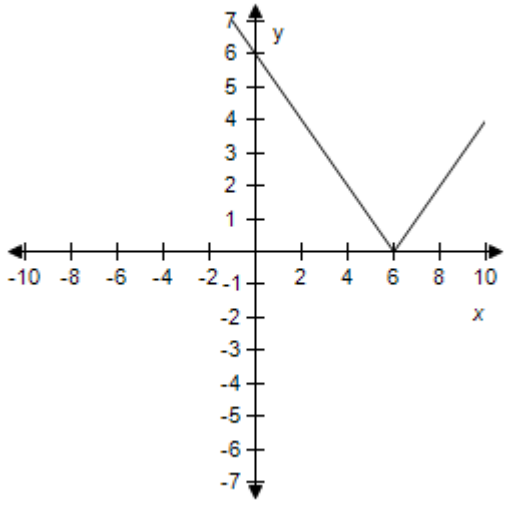
d.



e.







ANSWER: e
POINTS: 1
REFERENCES: 2.4.42
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/29/2014 1:32 AM

26. Evaluate the function $f(x) = [[x]]$ for $x = 9.2$.

a. $f(x) = 2$
b. $f(x) = 10$
c. $f(x) = 9$
d. $f(x) = -9$
e. $f(x) = 11$

ANSWER: c
POINTS: 1
REFERENCES: 2.4.43a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 10:04 AM

27. Evaluate the function $h(x) = 2[[x]]$ for $x = -4$.

a. $h(x) = -8$
b. $h(x) = -6$
c. $h(x) = 4$
d. $h(x) = -4$
e. $h(x) = -2$

ANSWER: a
POINTS: 1
REFERENCES: 2.4.44a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 10:05 AM

28. Evaluate the function $h(x) = [[x + 9]]$ for $x = -4$.

a. $h(x) = 13$
b. $h(x) = 5$
c. $h(x) = 9$
d. $h(x) = -13$
e. $h(x) = -5$

ANSWER: b
POINTS: 1
REFERENCES: 2.4.45
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 10:05 AM

29. Evaluate the function $f(x) = 2[[x]] + 7$ for $x = -7$.

a. $f(x) = -21$
b. $f(x) = 2$
c. $f(x) = -2$
d. $f(x) = -7$
e. $f(x) = 7$

ANSWER: d
POINTS: 1
REFERENCES: 2.4.46
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 10:06 AM

30. Evaluate the function $f(x) = [[3x + 1]]$ for $x = 4$.

a. $f(x) = -4$
b. $f(x) = 4$
c. $f(x) = 11$
d. $f(x) = 13$

e. $f(x) = 12$

ANSWER: d
POINTS: 1
REFERENCES: 2.4.47
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 10:06 AM

31. Evaluate the function $h(x) = \left[\left[\frac{1}{2}x + 9\right]\right]$ for $x = 6$.

a. $h(x) = 9$
b. $h(x) = 3$
c. $h(x) = -12$
d. $h(x) = 12$
e. $h(x) = -3$

ANSWER: d
POINTS: 1
REFERENCES: 2.4.48
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 10:07 AM

32. Evaluate the function $f(x) = 3[[3x - 1]] + 5$ for $x = 6$.

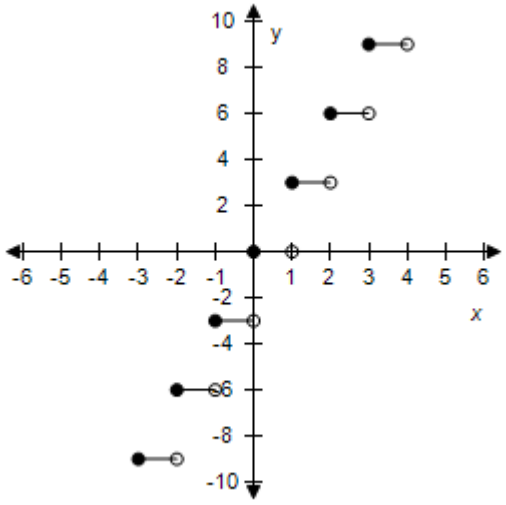
a. $f(x) = 51$
b. $f(x) = -6$
c. $f(x) = 56$
d. $f(x) = 6$
e. $f(x) = 46$

ANSWER: c
POINTS: 1
REFERENCES: 2.4.49
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 10:07 AM

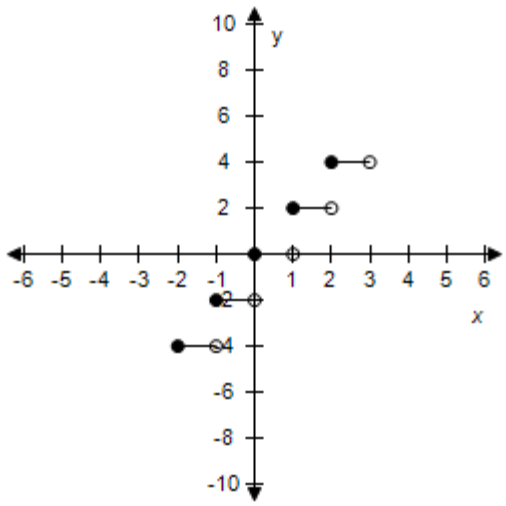
33. Select the graph of the function $f(x) = 3[[x]]$.

Section 1.6 - A Library of Parent Functions

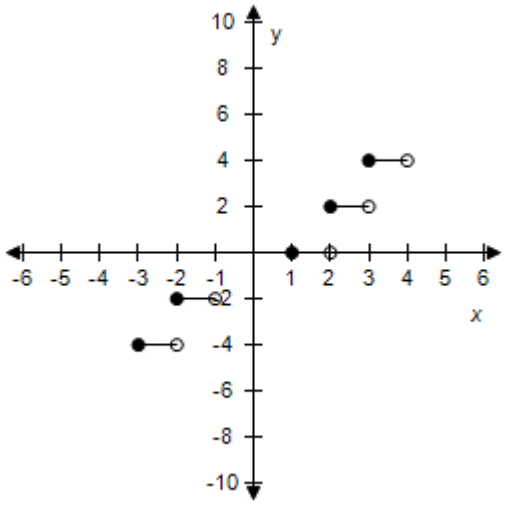
a.



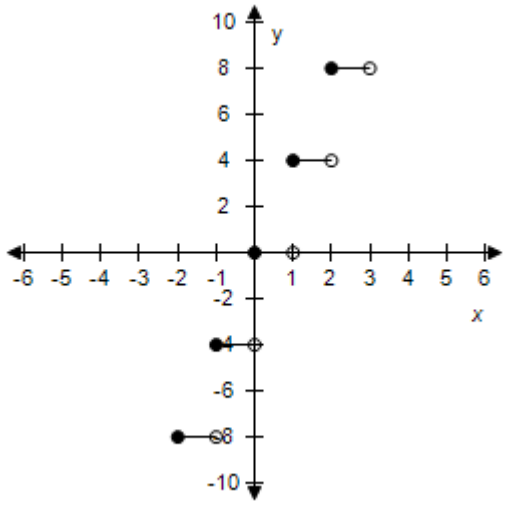
b.



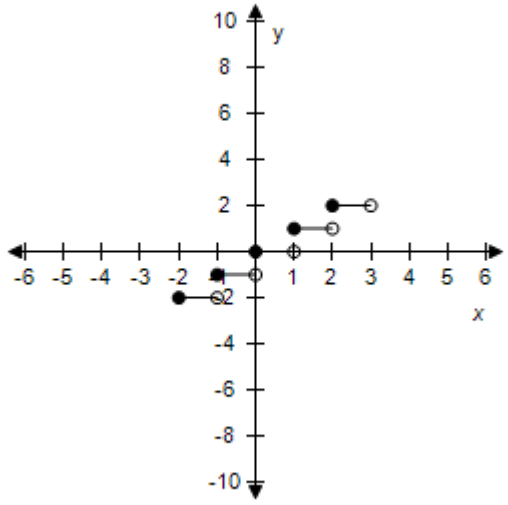
c.



d.



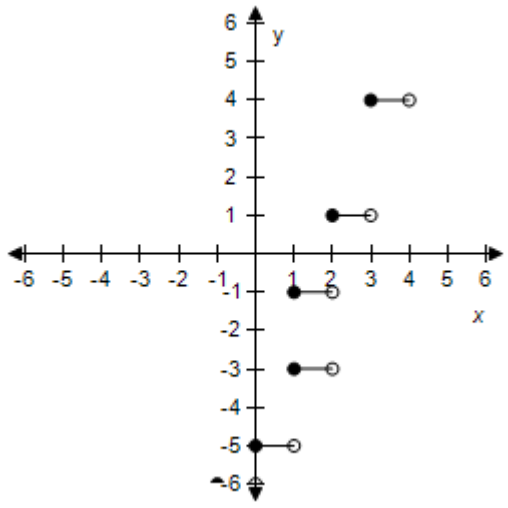
e.



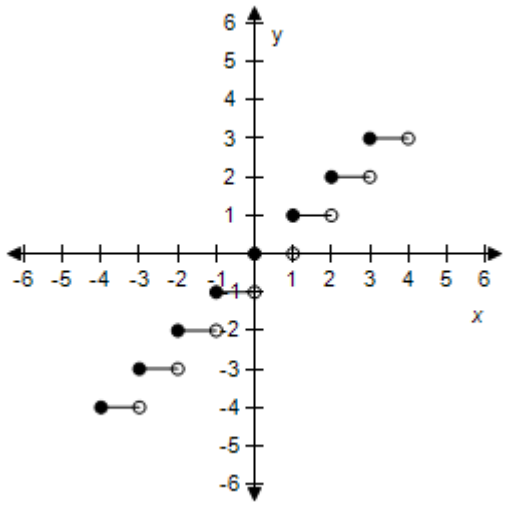
ANSWER: a
POINTS: 1
REFERENCES: 2.4.52
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 10:09 AM

34. Select the graph of the function: $f(x) = [[x]] - 4$.

a.

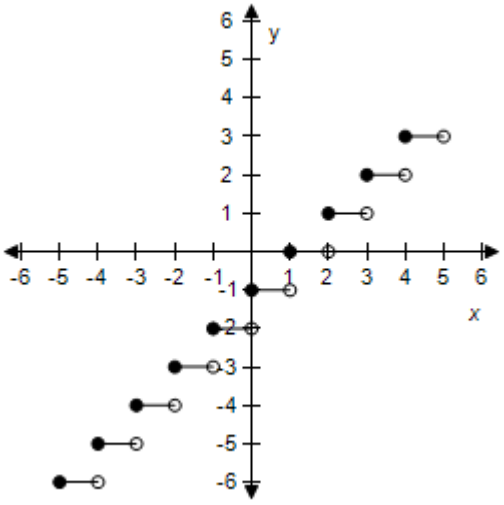


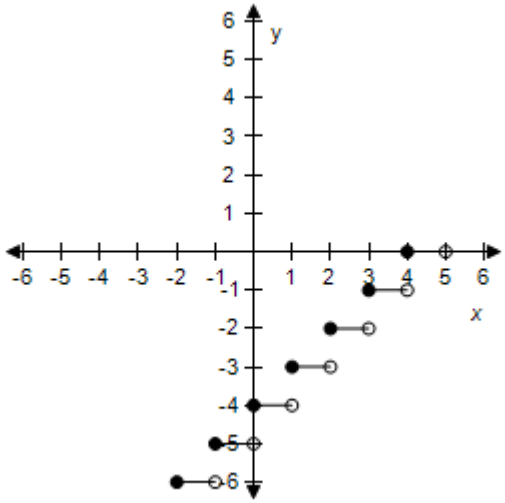
b.



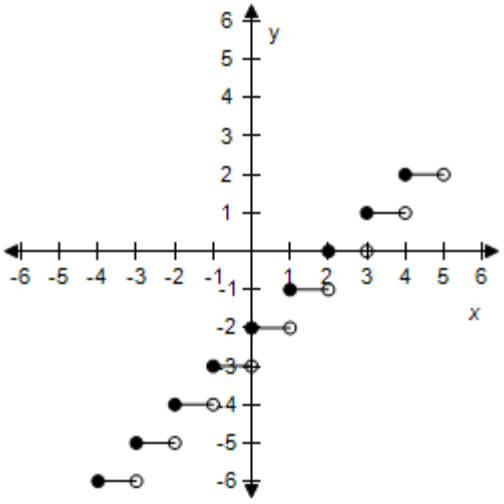
c.

d.





e.



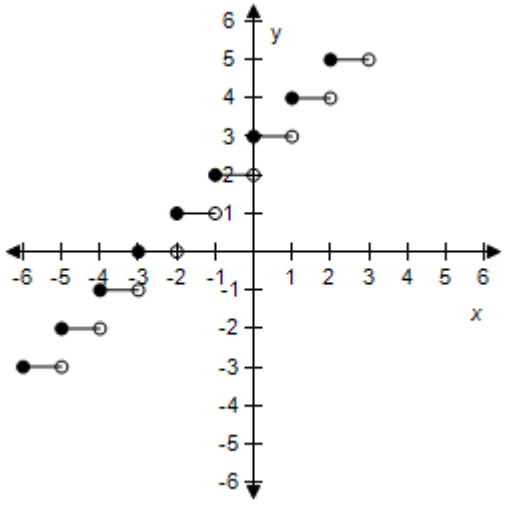
ANSWER: d
POINTS: 1
REFERENCES: 2.4.53
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 10:12 AM

35. Select the graph of the function: $f(x) = [[x + 3]]$.

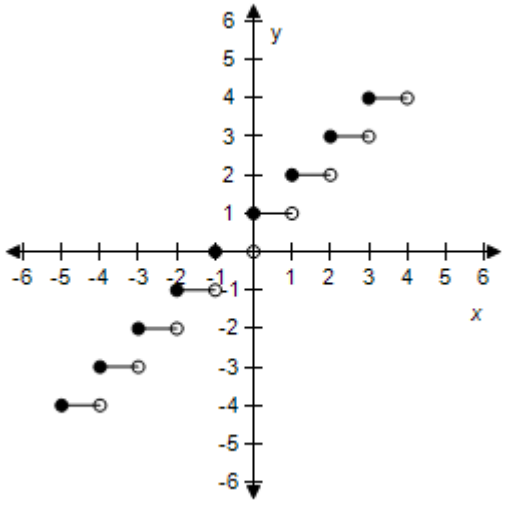
a.

b.

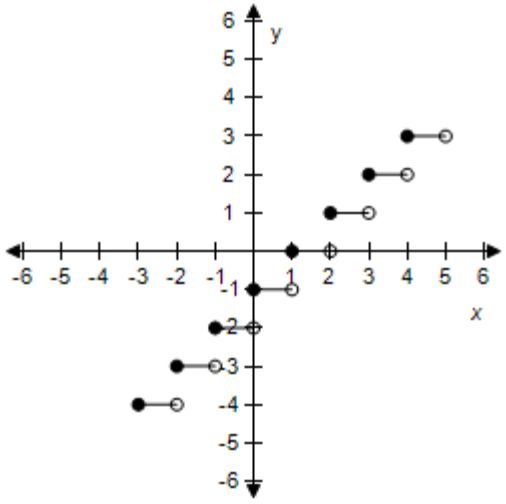
Section 1.6 - A Library of Parent Functions



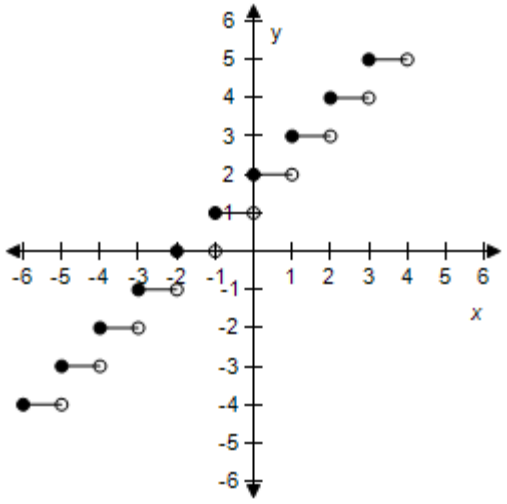
c.

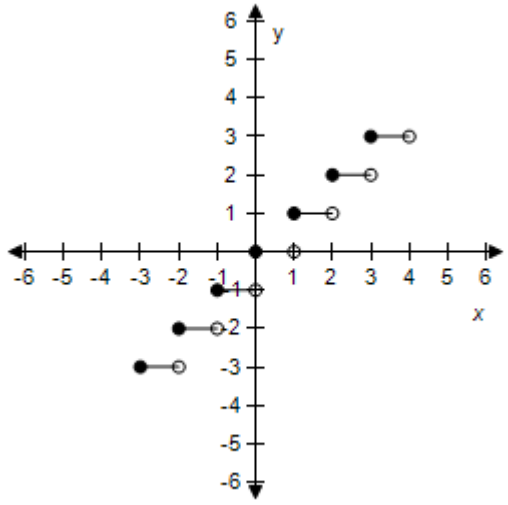


d.



e.

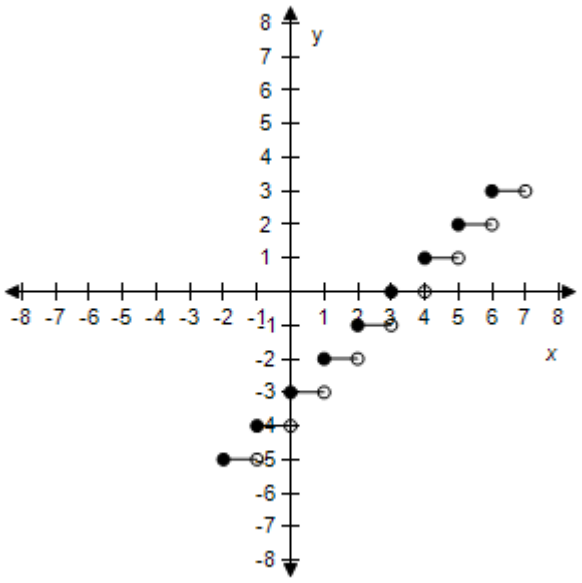




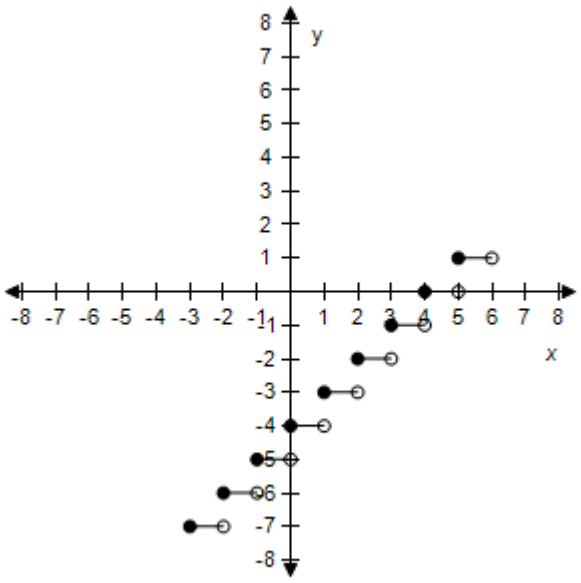
ANSWER: a
POINTS: 1
REFERENCES: 2.4.55
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 10:13 AM

36. Select the graph of the function $f(x) = [[x - 4]]$.

a.

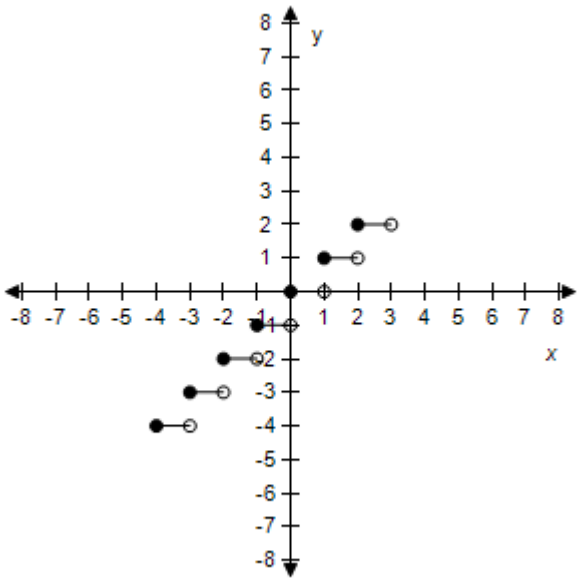


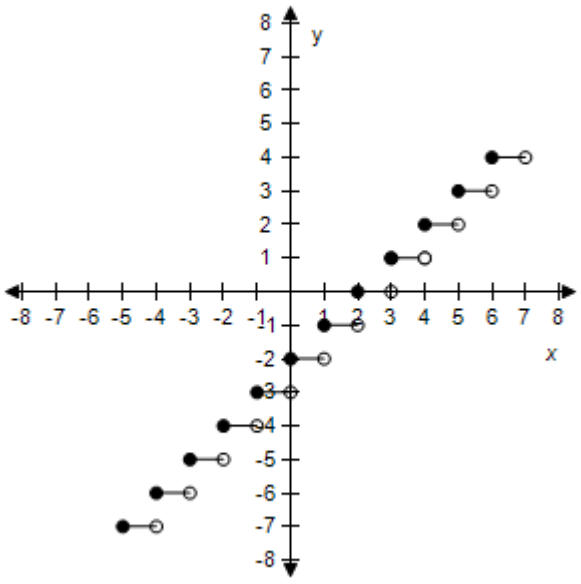
b.



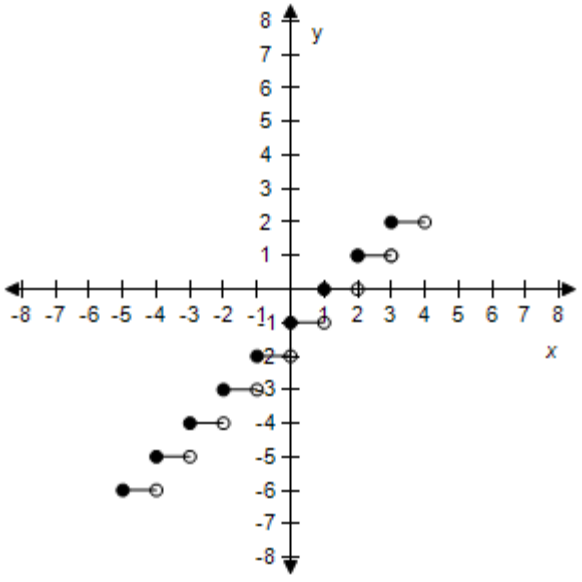
c.

d.





e.



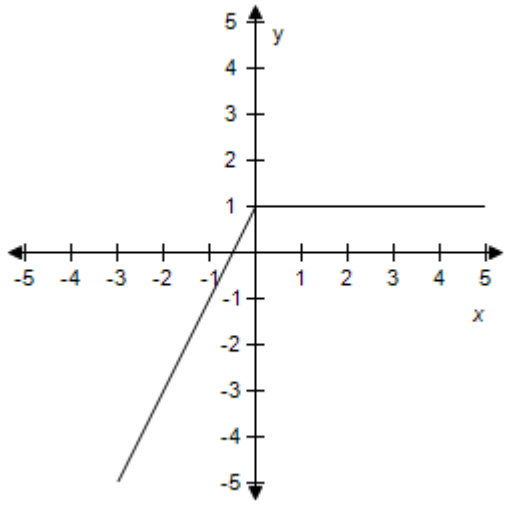
ANSWER: b
POINTS: 1
REFERENCES: 2.4.56
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 10:16 AM

37. Select the graph of the function.

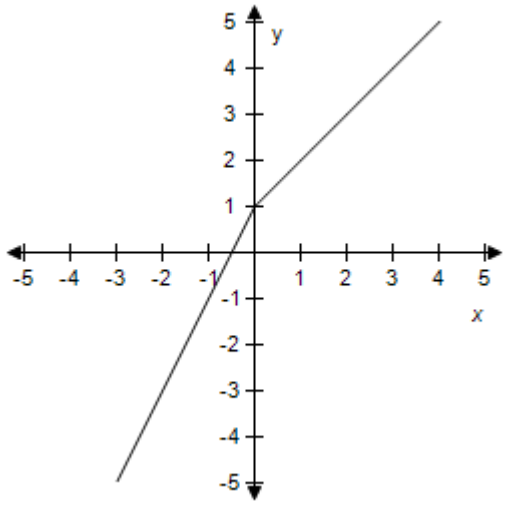
Section 1.6 - A Library of Parent Functions

$$f(x)=\begin{cases}2x+1 & x<0\\ 1-x & x\geq 0\end{cases}$$

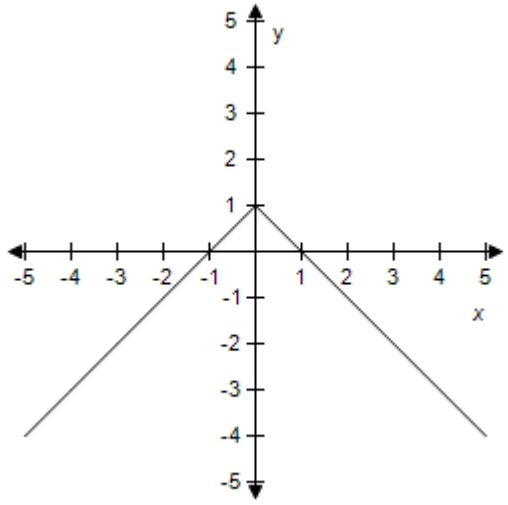
a.



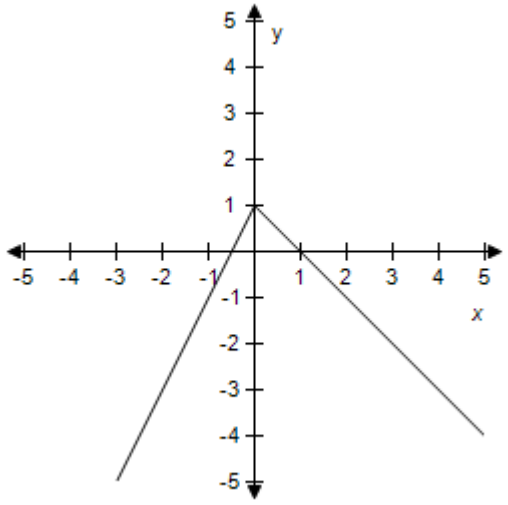
b.



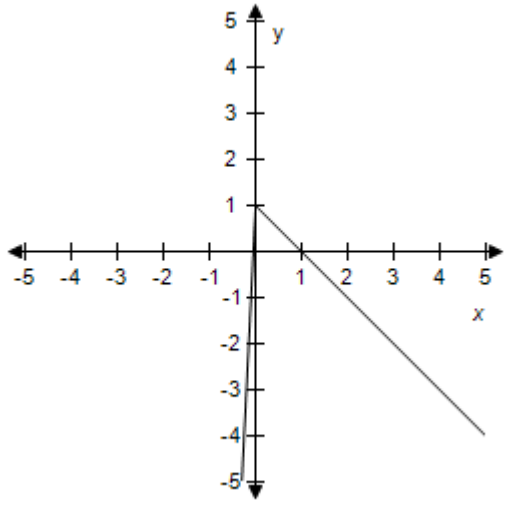
c.



d.



e.

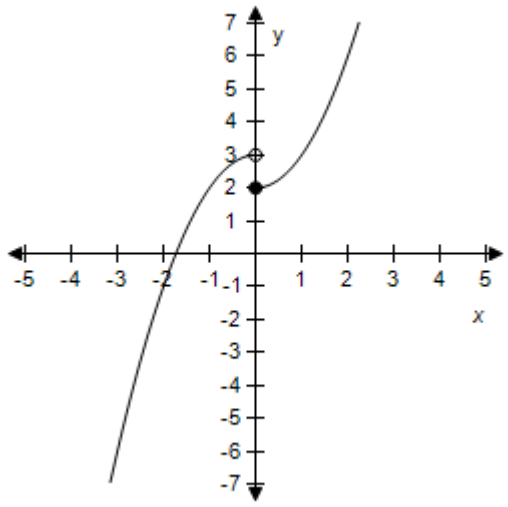


ANSWER: d
POINTS: 1
REFERENCES: 2.4.57
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/29/2014 7:05 AM

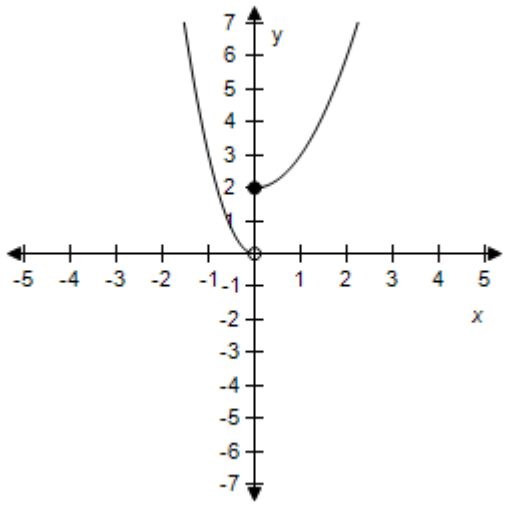
38. Select the graph of the function.

$$f(x)=\begin{cases} 3-x^2 & x<0 \\ x^2+2 & x\geq 0 \end{cases}$$

a.

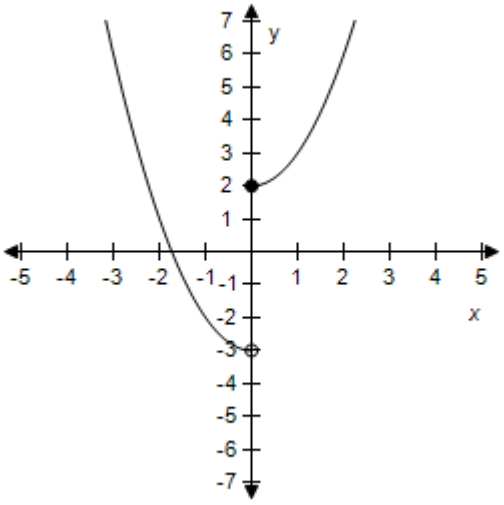


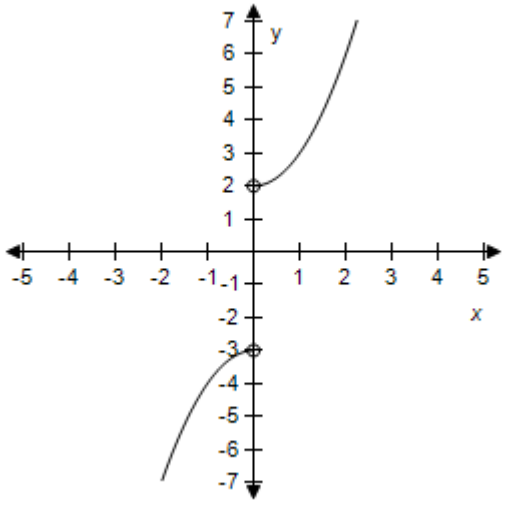
b.



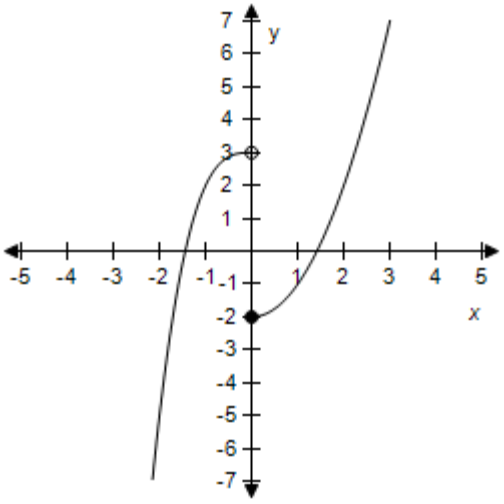
c.

d.





e.



ANSWER: a
POINTS: 1
REFERENCES: 2.4.62
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/29/2014 7:18 AM

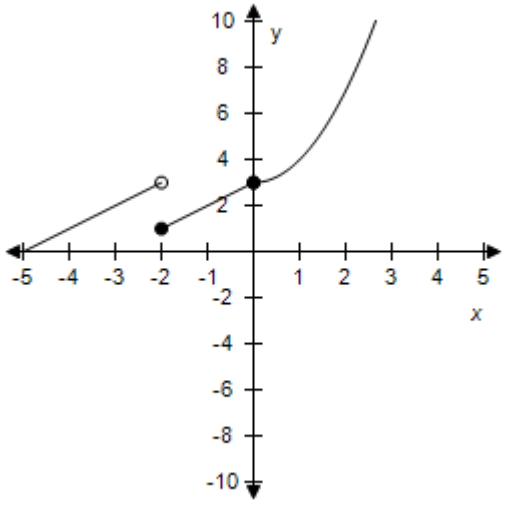
39. Select the graph of the function.

$$f(x)=\begin{cases} 5-x^2 & x<-2 \\ 3+x & -2\le x<0 \\ x^2+3 & x\ge 0 \end{cases}$$

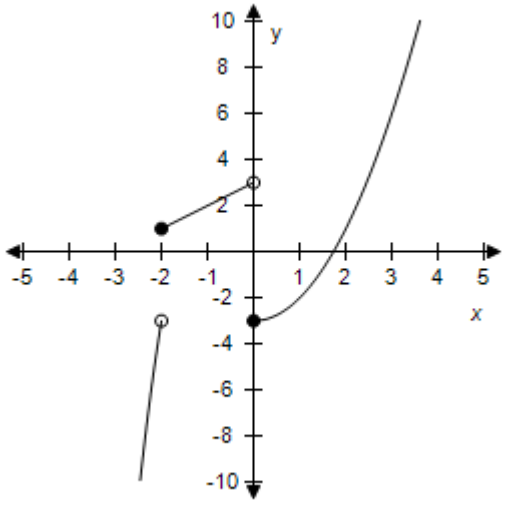
a.

b.

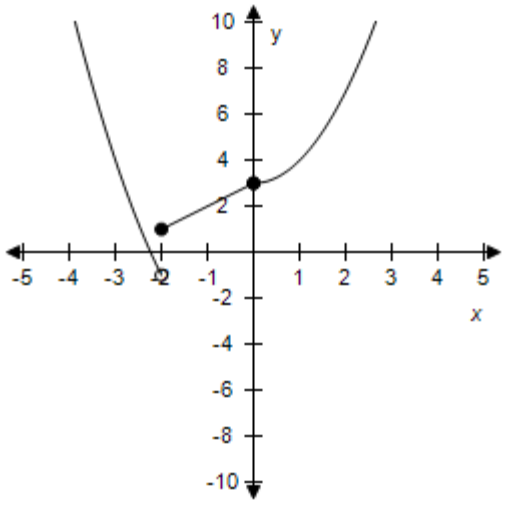
c.

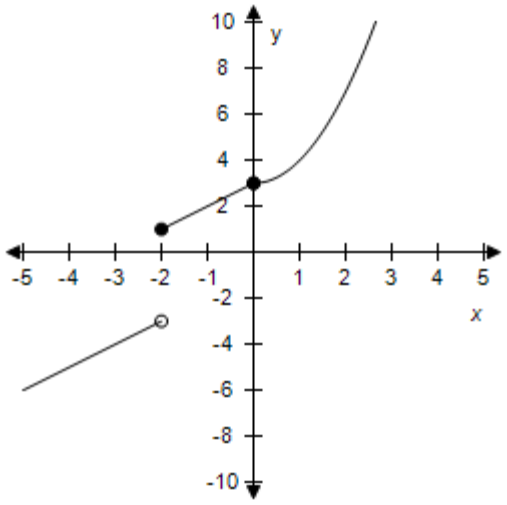


d.

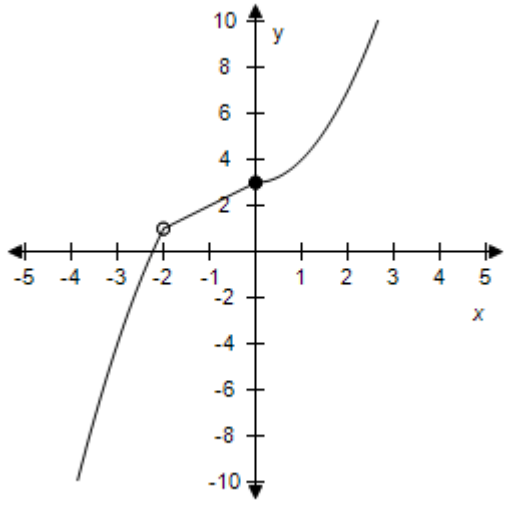


e.





Section 1.6 - A Library of Parent Functions



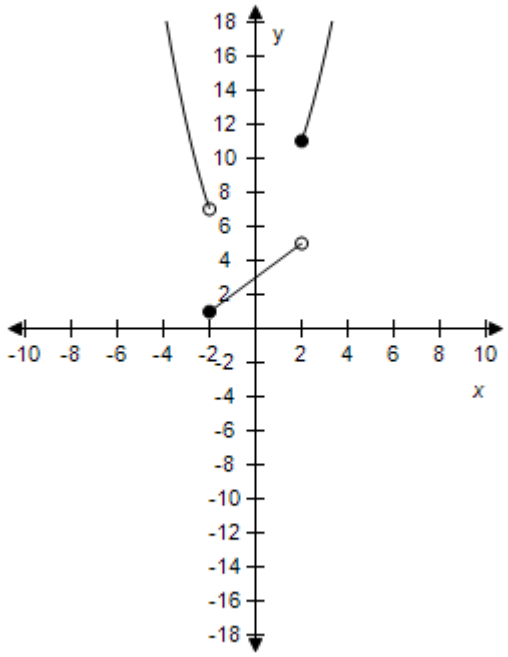
ANSWER: e
POINTS: 1
REFERENCES: 2.4.63
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/29/2014 7:55 AM

40. Select the graph of the function.

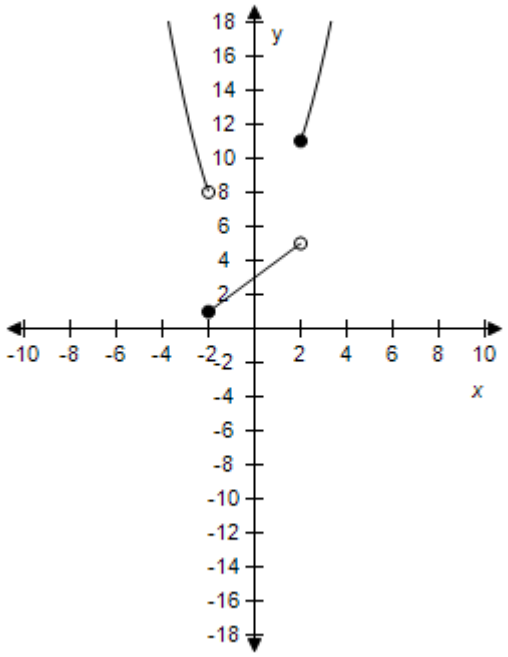
$$f(x)=\begin{cases} 3+x^2 & x<-2 \\ 3+x & -2\le x<2 \\ x^2+7 & x\ge 2 \end{cases}$$

a.

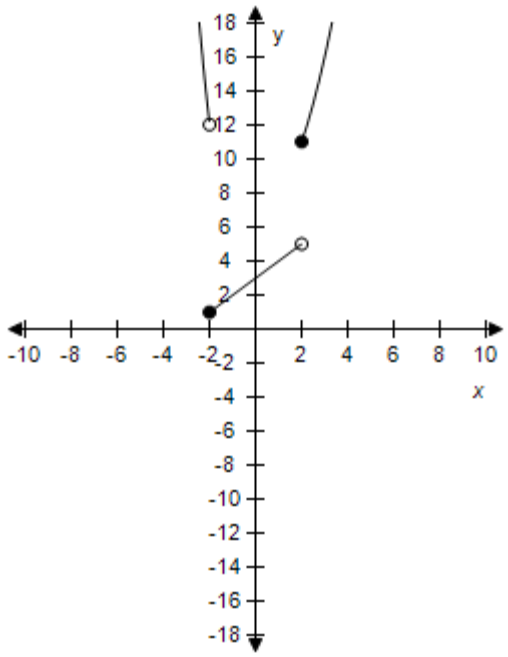
b.



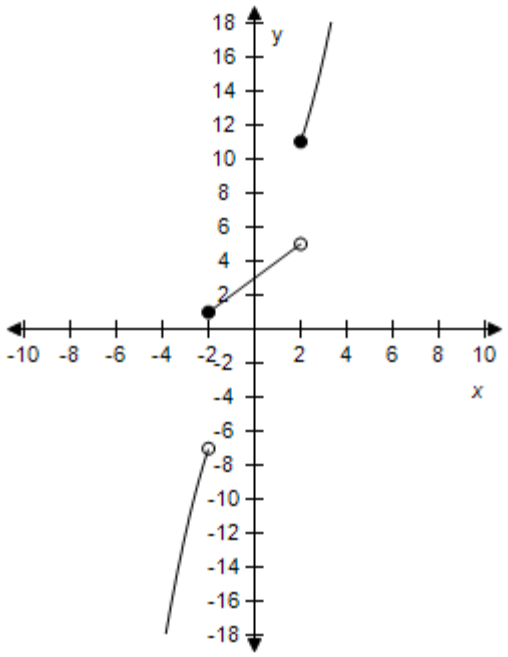
c.

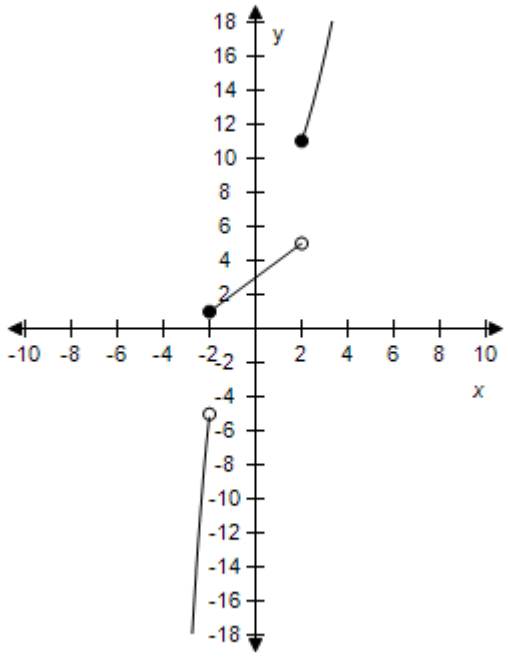


d.



e.





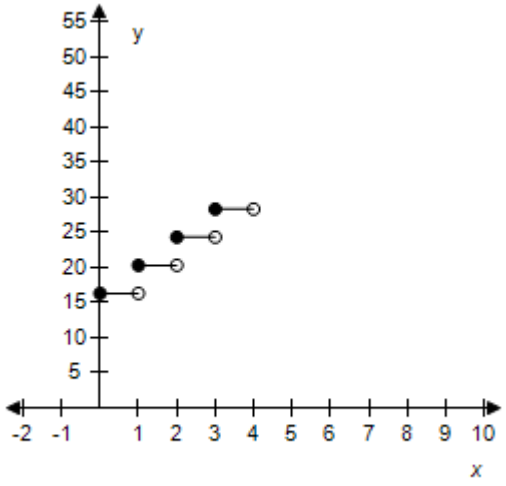
ANSWER: a
POINTS: 1
REFERENCES: 2.4.64
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/30/2014 8:03 AM

41. The cost of sending an overnight package from Los Angeles to Miami is \$26.30 for a package weighing up to but not including 1 pound and \$4.00 for each additional pound or portion of a pound. A model for the total cost C (in dollars) of sending the package is

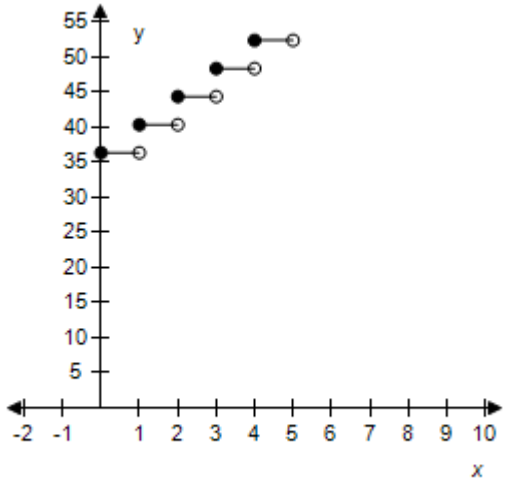
$C = 26.30 + 4.00[[x]]$, $x > 0$, where x is the weight in pounds.

Select the graph of the model.

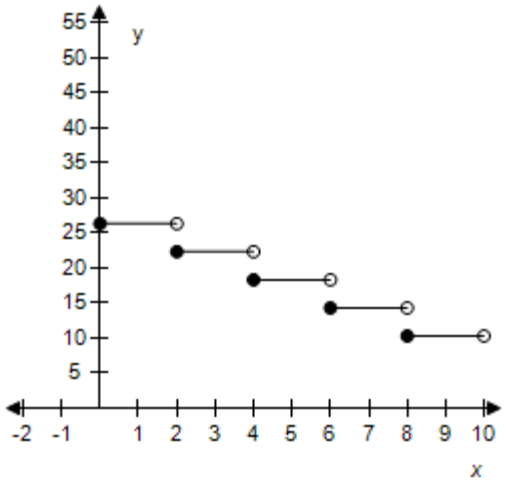
a. b.



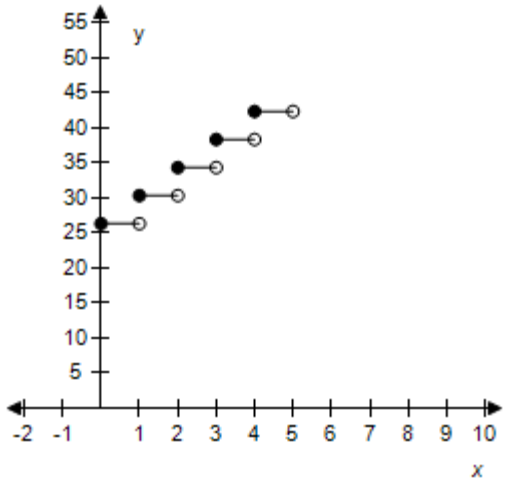
c.

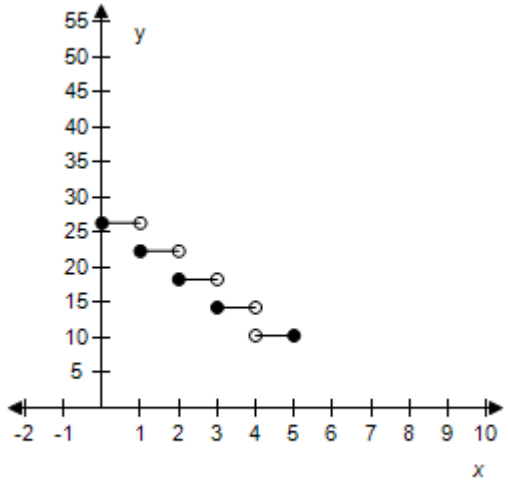


d.



e.





ANSWER: d
POINTS: 1
REFERENCES: 2.4.69a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 10:21 AM

42. The cost of sending an overnight package from Los Angeles to Miami is $26.40 for a package weighing up to but not including 1 pound and $3.25 for each additional pound or portion of a pound. A model for the total cost C (in dollars) of sending the package is

$C = 26.40 + 3.25[[x]]$, $x > 0$, where x is the weight in pounds.

Determine the cost of sending a package that weighs 5.25 pounds.

a. $45.65
b. $44.65
c. $43.65
d. $46.65
e. $42.65

ANSWER: e
POINTS: 1
REFERENCES: 2.4.69b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 10:21 AM

43. The cost of sending an overnight package from Los Angeles to Miami is $25.00 for a package weighing up to but not including 1 pound and $3.50 for each additional pound or portion of a pound. Use the greatest integer

function to create a model for the cost C of overnight delivery of a package weighing x pounds, $x > 0$.

a. $C = 25.00 - 3.50[[x]], x > 0$
b. $C = 25.00 + 3.50[[x]], x > 0$
c. $C = -25.00 + 3.50[[x]], x > 0$
d. $C = -25.00 - 3.50\ [[x]], x > 0$
e. $C = 25.00[[x]] + 3.50, x > 0$

ANSWER: b
POINTS: 1
REFERENCES: 2.4.70a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 10:23 AM

44. A mechanic is paid $13.00 per hour for regular time and time-and-a-half for overtime. The weekly wage function is given by

$$W(h) = \begin{cases} 13h & 0 < h \le 40 \\ 21(h-40)+520 & h > 40 \end{cases}$$

where h is the number of hours worked in a week.

Evaluate $W(30)$, $W(50)$.

a. $W(30) = 410, W(50) = 750$
b. $W(30) = 430, W(50) = 770$
c. $W(30) = 400, W(50) = 740$
d. $W(30) = 390, W(50) = 730$
e. $W(30) = 420, W(50) = 760$

ANSWER: d
POINTS: 1
REFERENCES: 2.4.71a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/1/2014 3:48 AM

45. The table shows the monthly revenue y (in thousands of dollars) of a landscaping business for each month of the year 2008, with $x = 1$ representing January.

x	y
1	6.0
2	6.1
3	7.1
4	9.2
5	12.3

6	16.4
7	12.2
8	10.2
9	8.3
10	6.3
11	4.3
12	2.4

A mathematical model that represents these data is:

$$f(x) = \begin{cases} 0.505x^2 - 1.47x + 7.0 & 1 \le x \le 6 \\ -1.97x + 26.0 & 6 < x \le 12 \end{cases}$$

Find $f(1)$ and $f(12)$.

a. $f(1) = 2.860, f(12) = 6.79$
b. $f(1) = 3.360, f(12) = 7.04$
c. $f(1) = 6.035, f(12) = 2.36$
d. $f(1) = 2.860, f(12) = 6.54$
e. $f(1) = 2.860, f(12) = 6.29$

ANSWER: c
POINTS: 1
REFERENCES: 2.4.73b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 10:25 AM

46. Write the linear function f such that it has the indicated values.
$f(-1) = -5, f(-9) = -6$

a. $y = -\frac{3}{4}x + \frac{17}{3}$
b. $y = 8x + 3$
c. $y = \frac{1}{8}x - \frac{41}{8}$
d. $y = \frac{1}{8}x - \frac{39}{8}$
e. $y = -\frac{4}{3}x - \frac{11}{3}$

ANSWER: d
POINTS: 1
REFERENCES: 2.4.12
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 10/1/2014 4:54 AM

Section 1.6 - A Library of Parent Functions

DATE MODIFIED: 10/27/2014 2:22 AM

47. Evaluate the function for the indicated values.

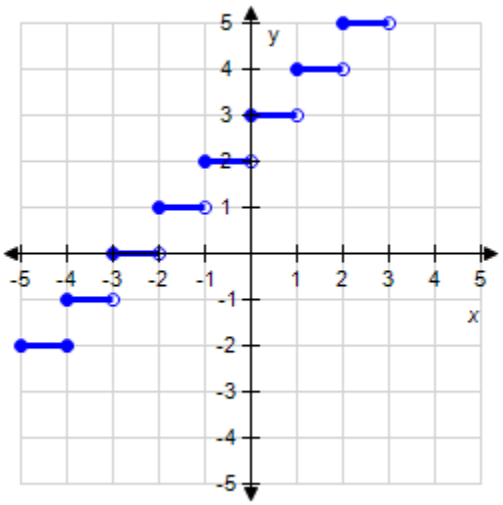
$f(x) = 5[[x + 3]] - 5$

(i) $f(3)$ (ii) $f(-63.30)$ (iii) $f(\frac{7}{8})$

a. (i) 25 (ii) –305 (iii) 15
b. (i) 25 (ii) –305 (iii) 10
c. (i) 26 (ii) –310 (iii) 15
d. (i) 26 (ii) –310 (iii) 10
e. (i) 25 (ii) –310 (iii) 10

ANSWER: e
POINTS: 1
REFERENCES: 2.4.46
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 10:37 AM

48. Which function does the graph represent?



a. $g(x) = [[3x]]$
b. $g(x) = [[x+3]]$
c. $g(x) = 3[[x]]$
d. $g(x) = [[-4x]]$
e. $g(x) = [[x-3]]$

ANSWER: b
POINTS: 1
REFERENCES: 2.4.55

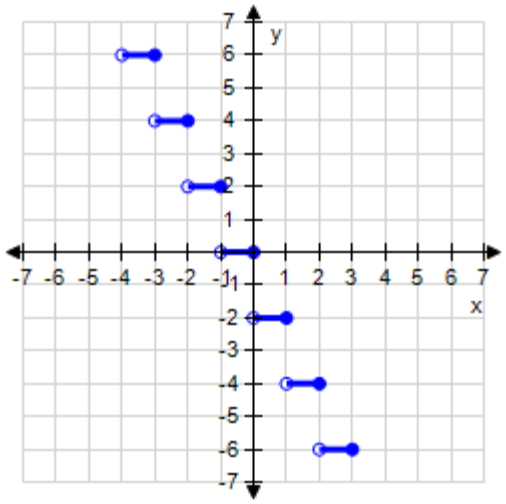
Section 1.6 - A Library of Parent Functions

QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 10:42 AM

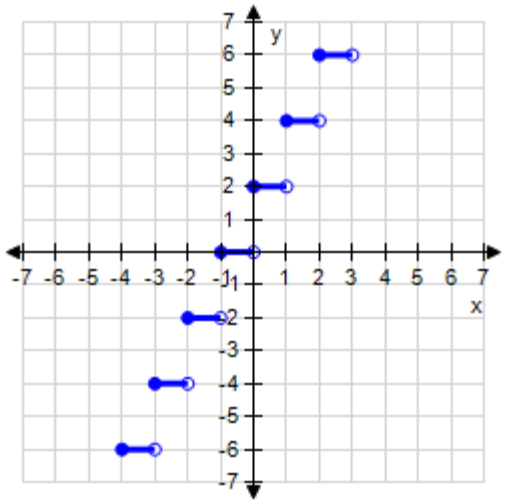
49. Which graph represents the function?

$g(x) = 2[[x]]$

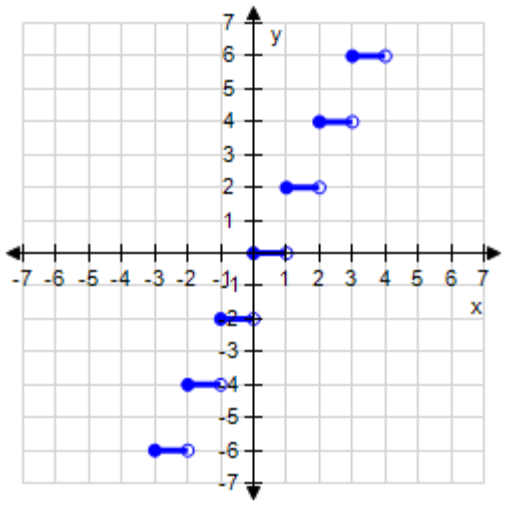
a.



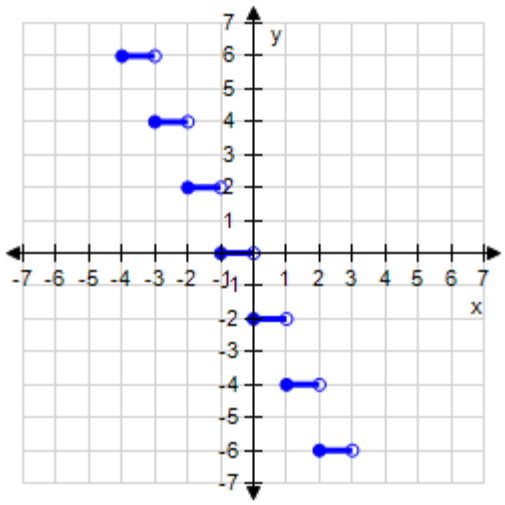
b.



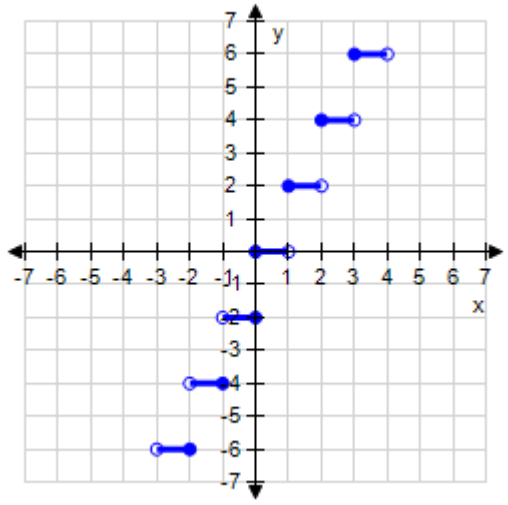
c.



d.



e.

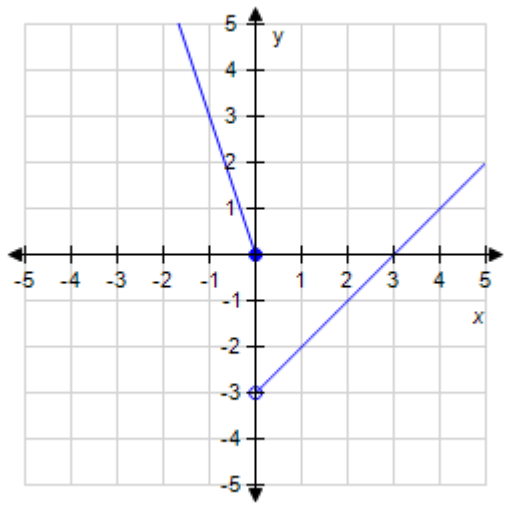


ANSWER: c
POINTS: 1
REFERENCES: 35
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 10/1/2014 7:29 AM
DATE MODIFIED: 5/15/2015 2:26 AM

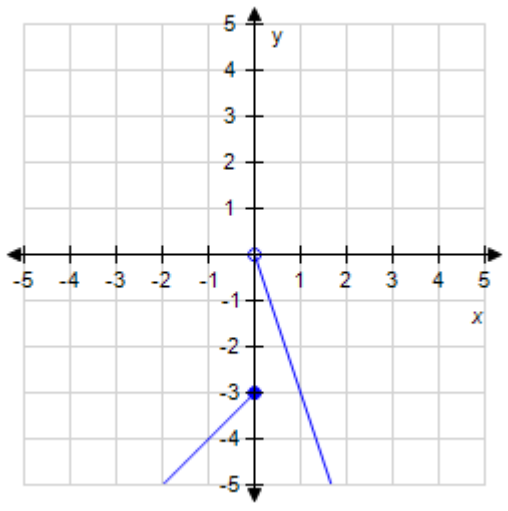
50. Which graph represents the function?

$$f(x) = \begin{cases} -3x, & x < 0 \\ x - 3, & x \geq 0 \end{cases}$$

a.

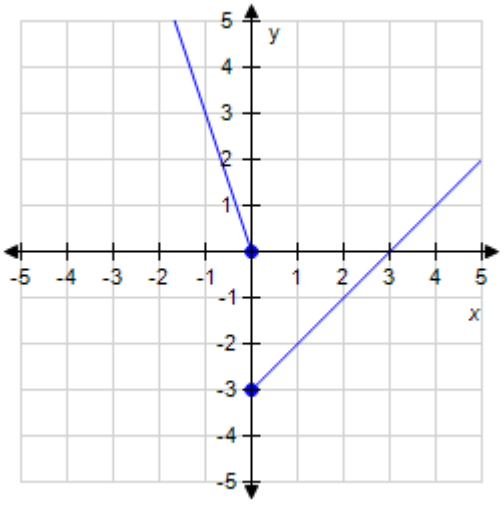


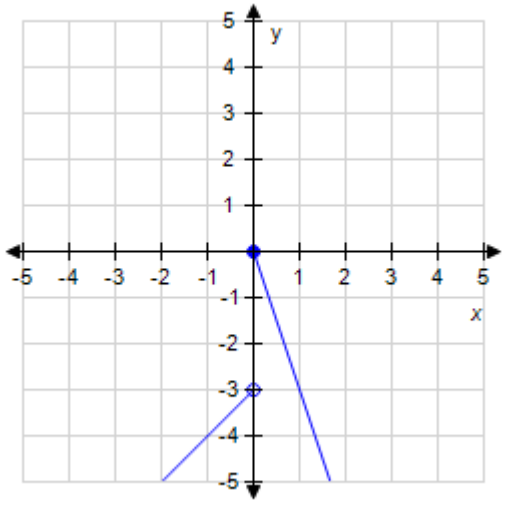
b.



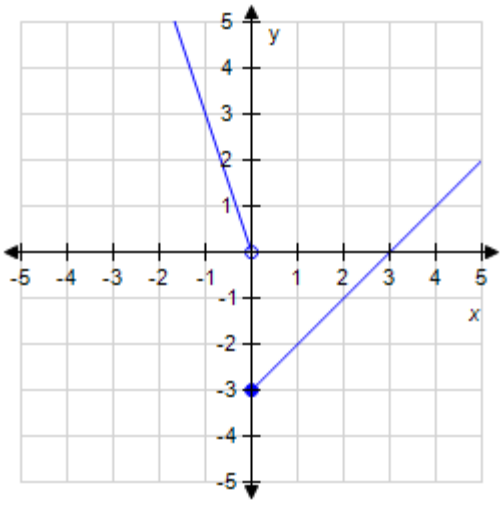
c.

d.





e.



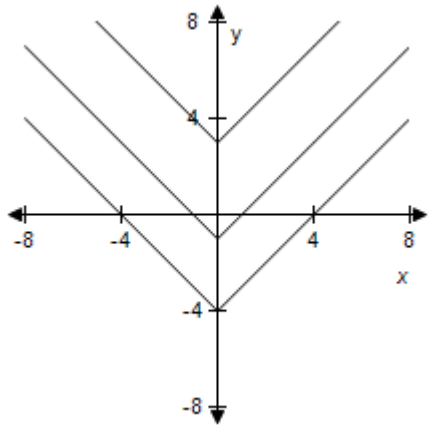
ANSWER: e
POINTS: 1
REFERENCES: 2.4.58
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/15/2015 2:31 AM

Section 1.7 - Transformations of Functions

1. For following function, select (on the same set of coordinate axes) a graph for $c = -1, 3$ and 4.

$f(x) = |x| + c$

a.



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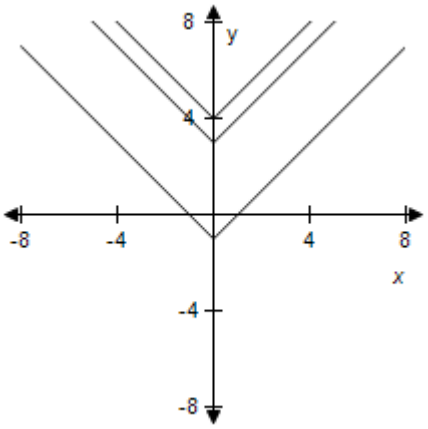
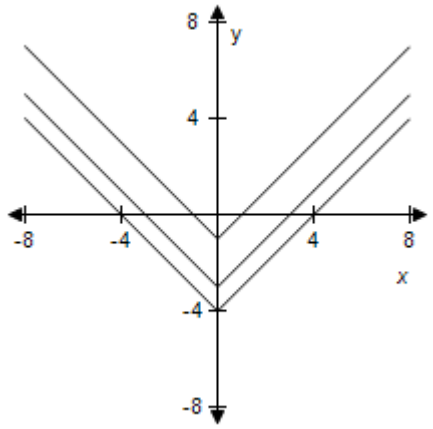
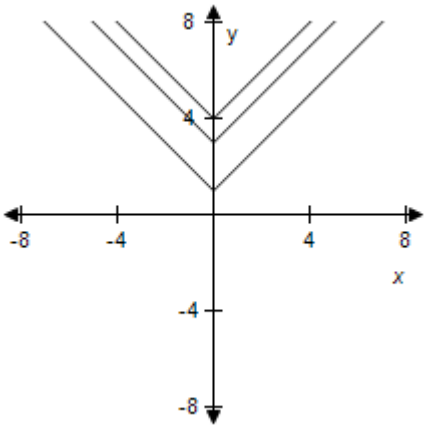


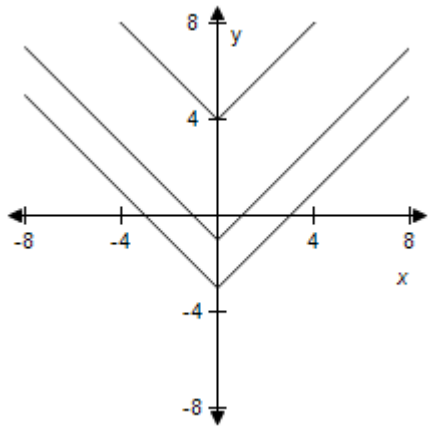
c.



d.



e.



ANSWER: b
POINTS: 1
REFERENCES: 2.5.7a

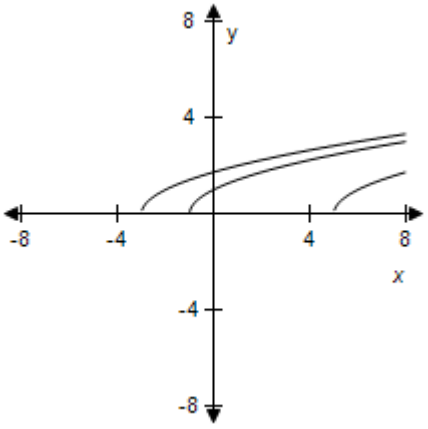
Section 1.7 - Transformations of Functions

QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/15/2015 12:23 AM

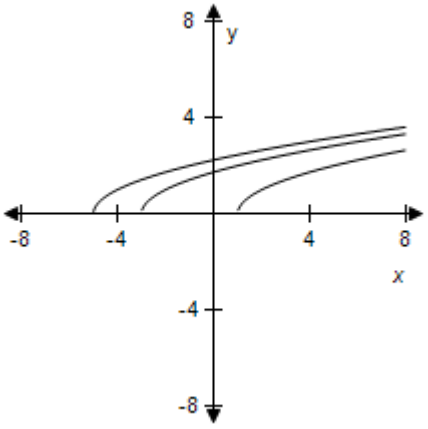
2. For following function, select (on the same set of coordinate axes) a graph for $c = -3, -5$ and -1.

$f(x) = \sqrt{x + c}$

a.



b.



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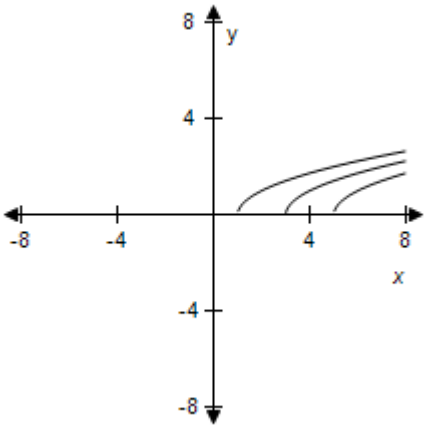
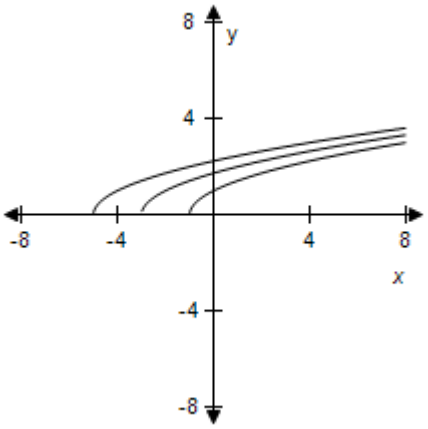
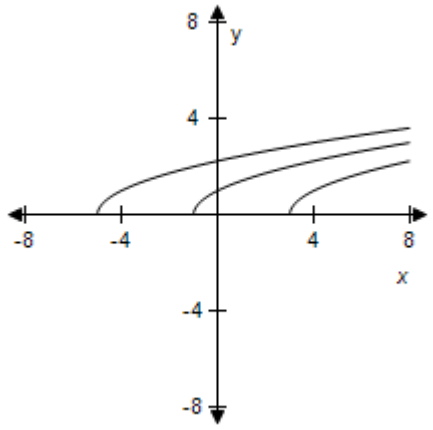


d.



e.

Section 1.7 - Transformations of Functions

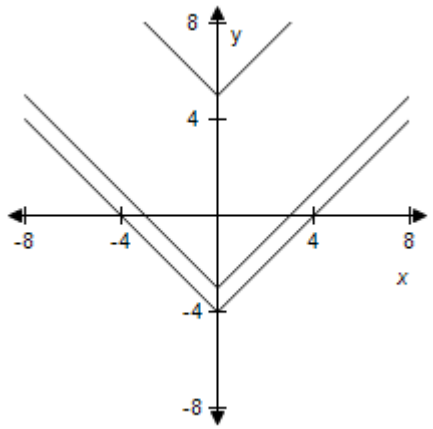


ANSWER: c
POINTS: 1
REFERENCES: 2.5.8b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/15/2015 2:36 AM

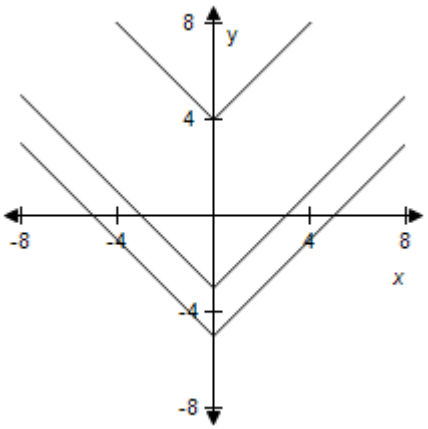
3. For following function, select (on the same set of coordinate axes) a graph for $c = -3,\ 5$ and 4.

$f(x) = |x - c|$

a.



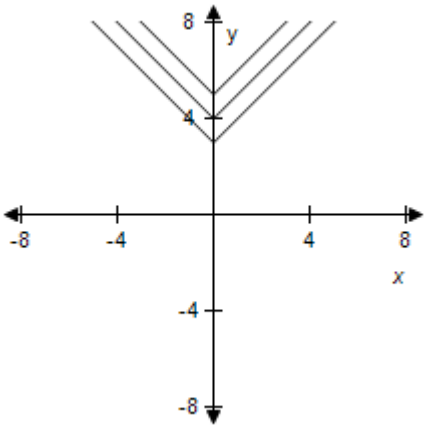
b.

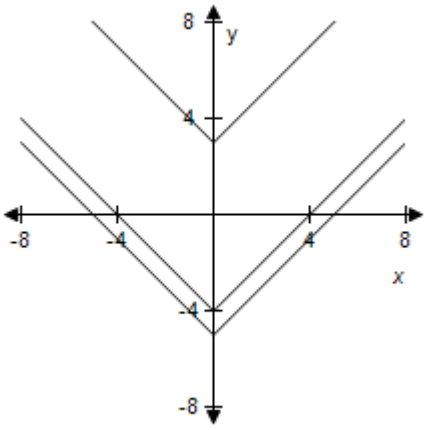


c.

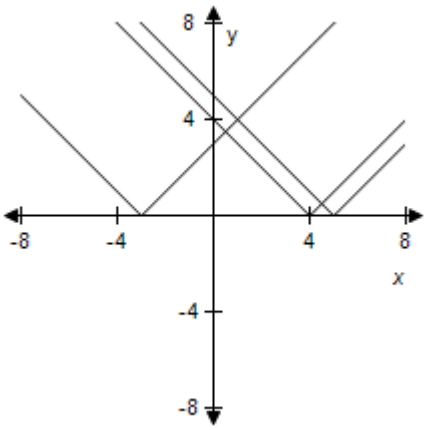
d.

Section 1.7 - Transformations of Functions





e.

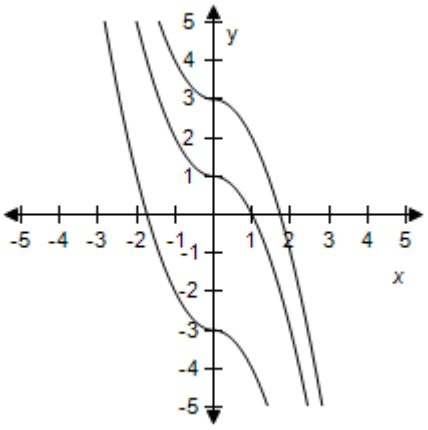


ANSWER: e
POINTS: 1
REFERENCES: 2.5.7b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/15/2015 12:29 AM

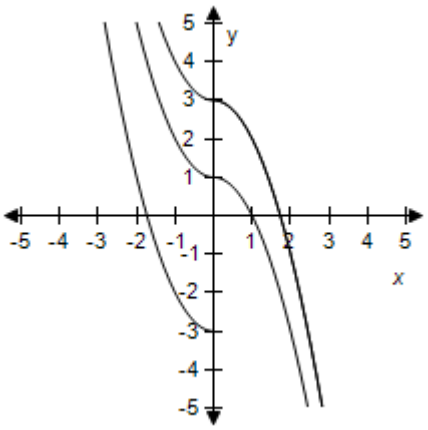
4. For following function, select (on the same set of coordinate axes) a graph of function for $c = 3,\ 1$ and -3.

$$f(x) = \begin{cases} x^2 + c, & x < 0 \\ -x^2 + c, & x \geq 0 \end{cases}$$

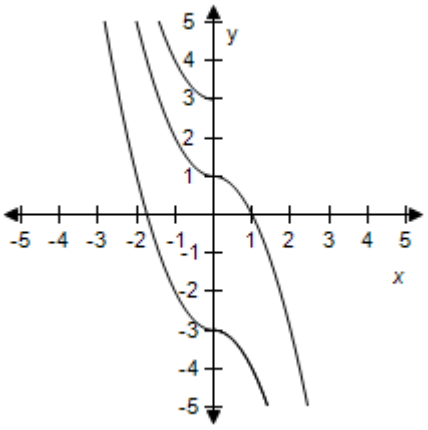
a. b.



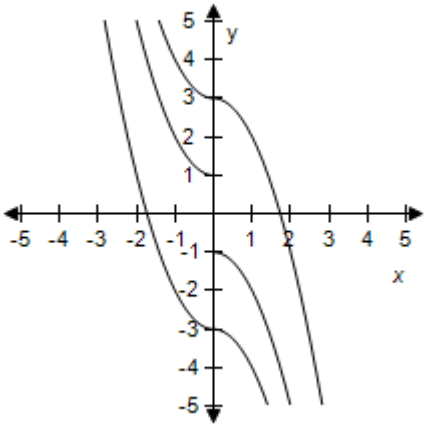
c.



d.



e.

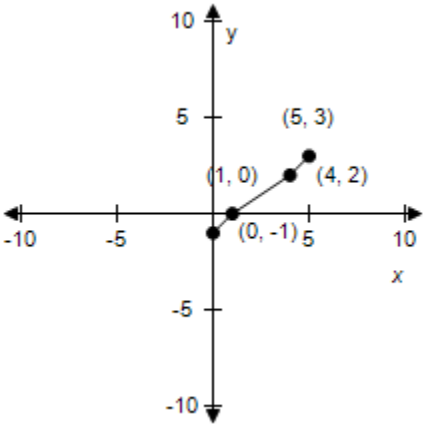


ANSWER: a
POINTS: 1
REFERENCES: 2.5.10a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/15/2015 12:31 AM

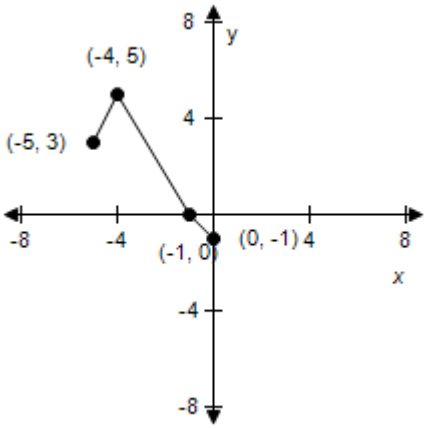
Section 1.7 - Transformations of Functions

5. Use the given graph of f to select the graph for the following function.

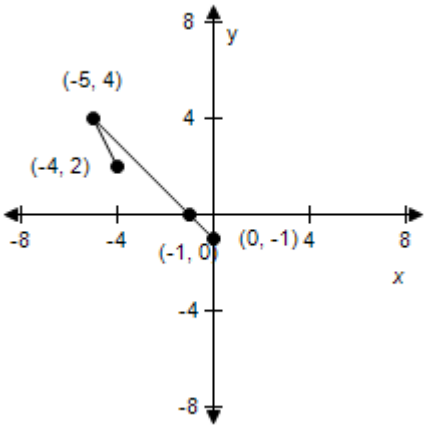
$y = f(-x)$



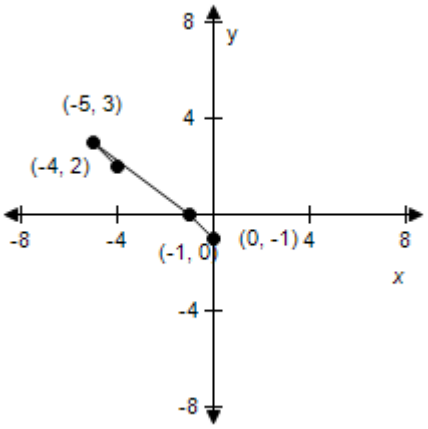
a.



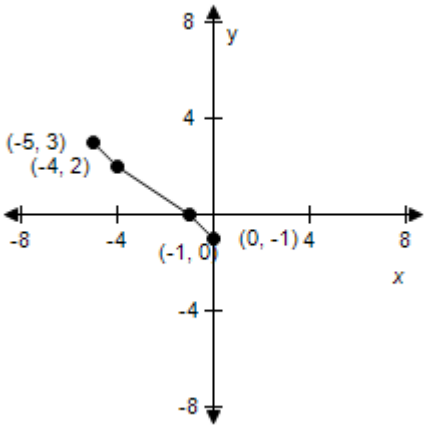
b.



c.

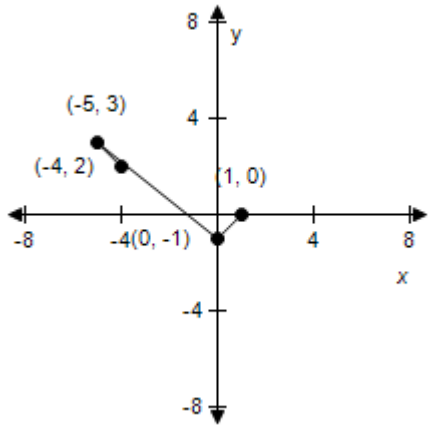


d.



e.

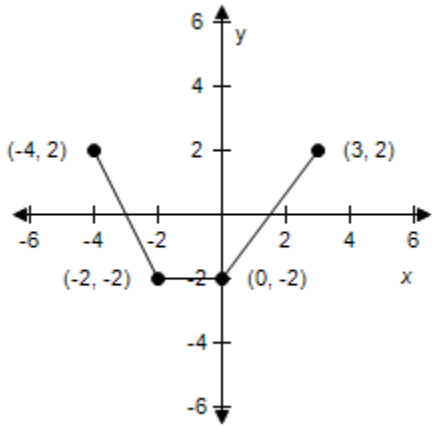
Section 1.7 - Transformations of Functions



ANSWER: d
POINTS: 1
REFERENCES: 2.5.11f
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/15/2015 12:37 AM

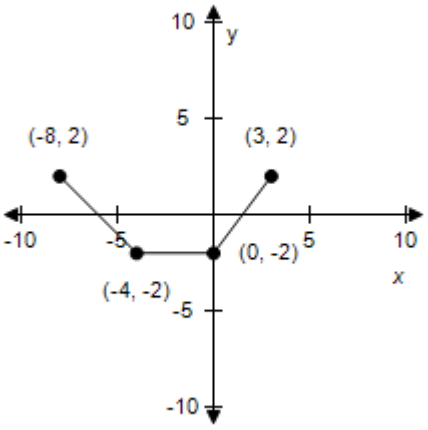
6. Use the given graph of f to select the graph for the following function.

$y = f(2x)$

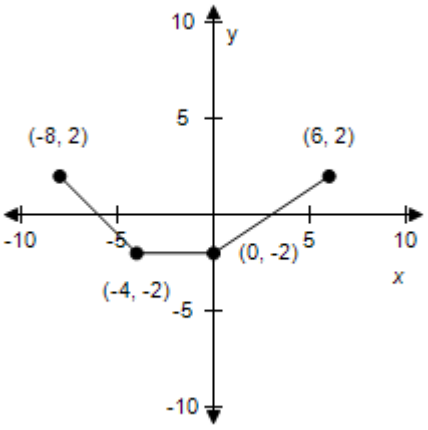


a.

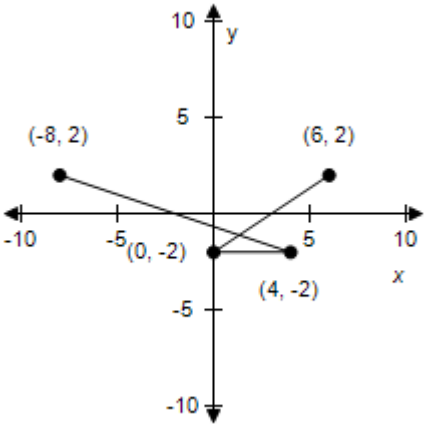
b.



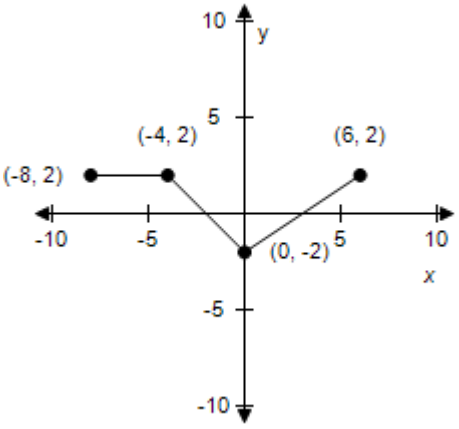
c.

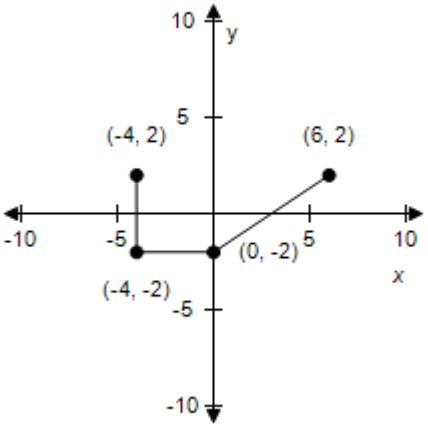


d.



e.



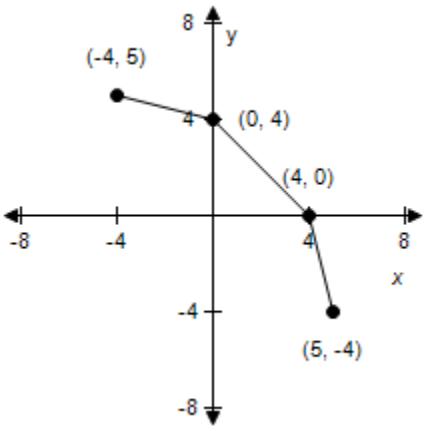


ANSWER: b
POINTS: 1
REFERENCES: 2.5.12g
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/15/2015 12:41 AM

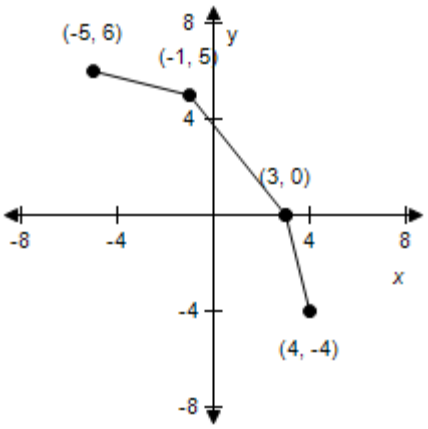
Section 1.7 - Transformations of Functions

7. Use the given graph of f to select the graph for following function.

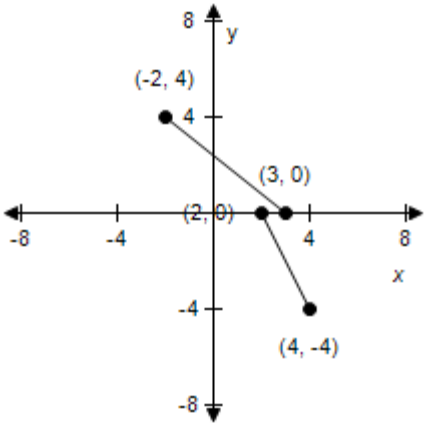
$y = f(x + 1)$



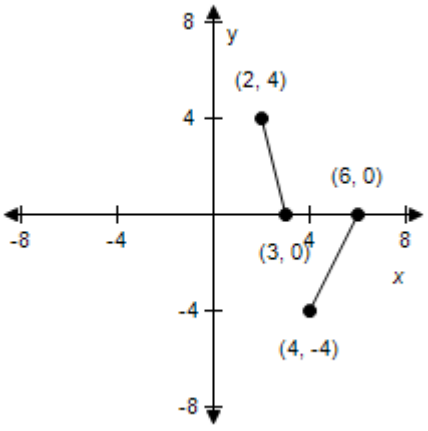
a.



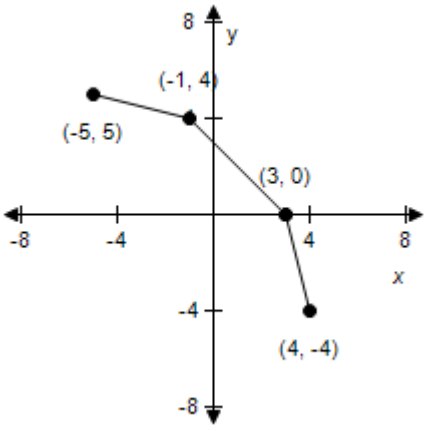
b.



c.

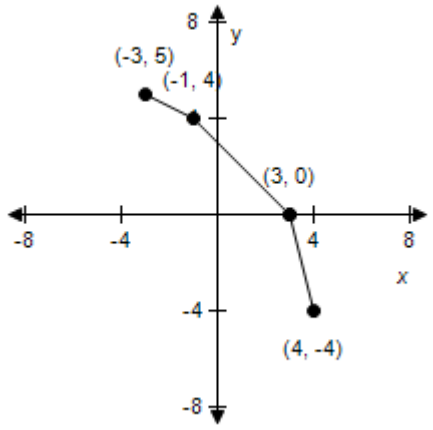


d.



e.

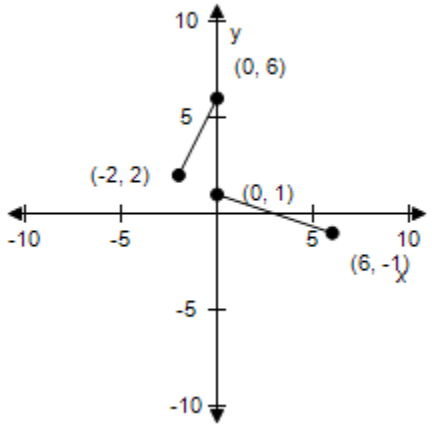
Section 1.7 - Transformations of Functions



ANSWER: d
POINTS: 1
REFERENCES: 2.5.13d
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/15/2015 12:57 AM

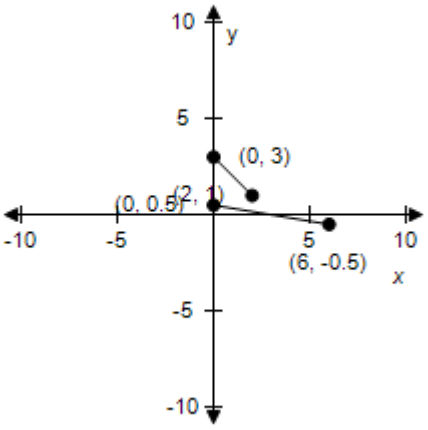
8. Use the given graph of f to select the graph for following function.

$$y = \frac{1}{2}f(x)$$

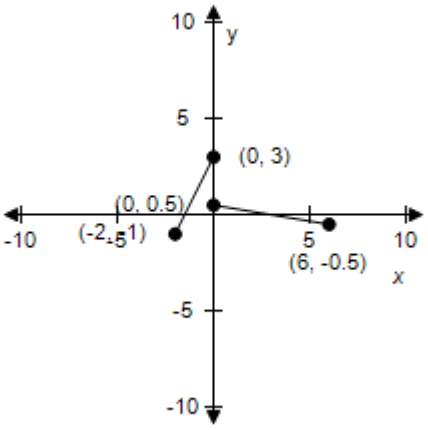


a. b.

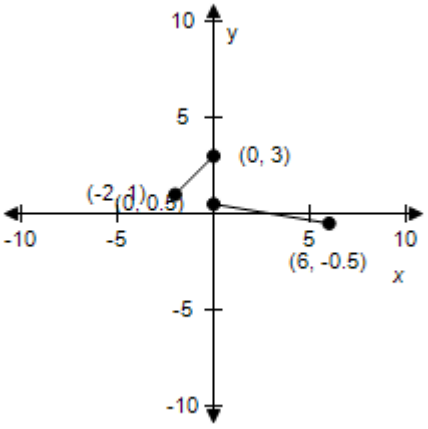
Section 1.7 - Transformations of Functions



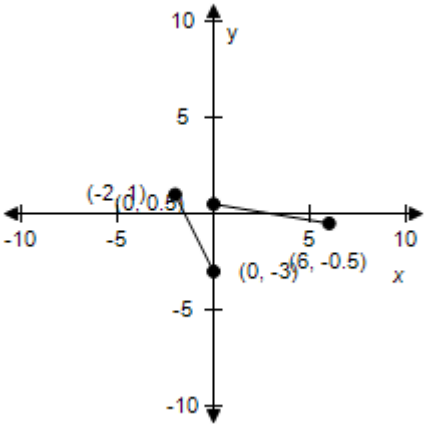
c.

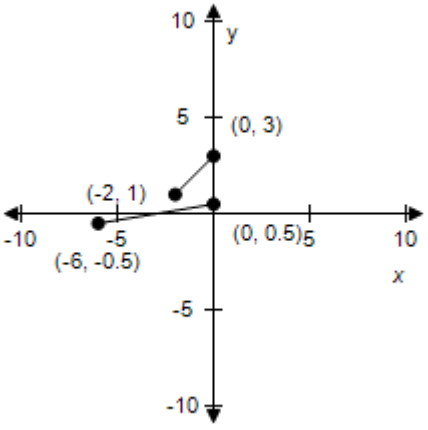


d.



e.

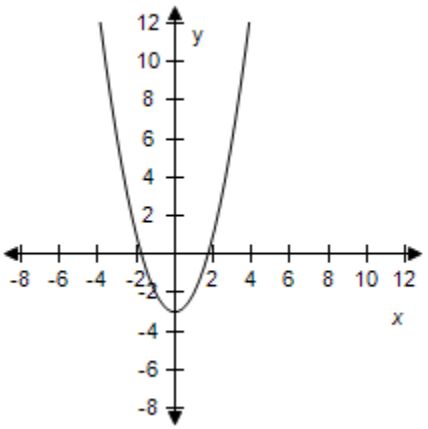




ANSWER: c
POINTS: 1
REFERENCES: 2.5.14c
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/15/2015 1:04 AM

Section 1.7 - Transformations of Functions

9. Use the graph of $f(x) = x^2$ to write an equation for the function whose graph is shown.



a. $y = x^2 + 3$

b. $y = x^2 + 4$

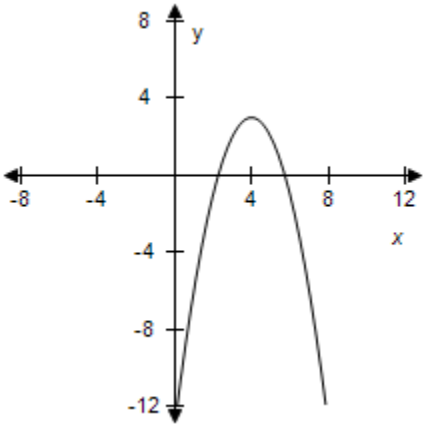
c. $y = -x^2$

d. $y = x^2 - 3$

e. $y = x^2 - 4$

ANSWER: d
POINTS: 1
REFERENCES: 2.5.15a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/15/2015 1:07 AM

10. Use the graph of $f(x) = x^2$ to write an equation for the function whose graph is shown.



Section 1.7 - Transformations of Functions

a. $y = -(x-4)^2+3$

b. $y = -(x-4)^2-3$

c. $y = (x+4)^2+3$

d. $y = (x-4)^2+3$

e. $y = -(x+4)^2+3$

ANSWER: a
POINTS: 1
REFERENCES: 2.5.15c
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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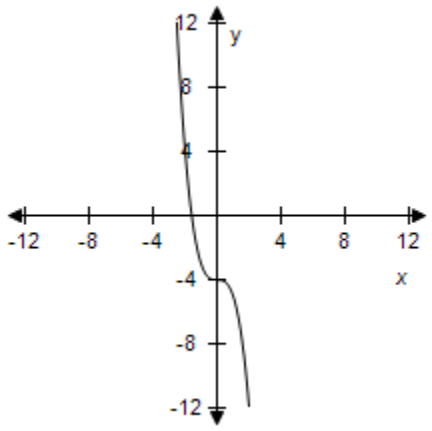
11. Use the graph of $f(x) = x^3$ to write an equation for the function whose graph is shown.



a. $y = -5+x^3$

b. $y = -5-x^3$

c. $y = -6+x^3$

d. $y = -4+x^3$

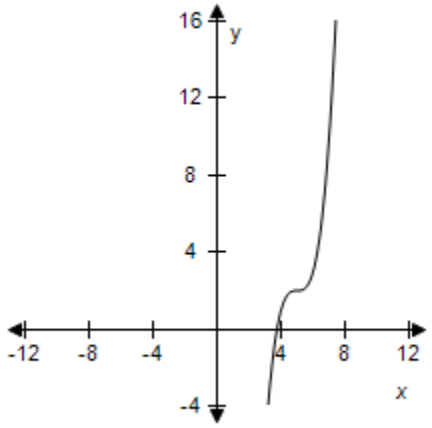
e. $y = -4-x^3$

ANSWER: e
POINTS: 1
REFERENCES: 2.5.16a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM

Section 1.7 - Transformations of Functions

DATE MODIFIED: 5/15/2015 1:09 AM

12. Use the graph of $f(x) = x^3$ to write an equation for the function whose graph is shown.



a. $y = (x-5)^3 - 1$

b. $y = (x+5)^3 + 2$

c. $y = (x+5)^3 - 2$

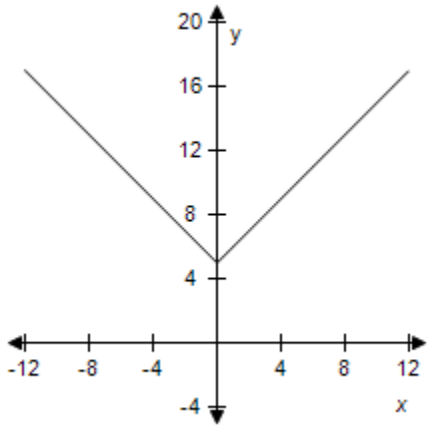
d. $y = (x-5)^3 + 2$

e. $y = (x-5)^3 + 1$

ANSWER: d
POINTS: 1
REFERENCES: 2.5.16b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/15/2015 1:09 AM

13. Use the graph of $f(x) = |x|$ to write an equation for the function whose graph is shown.

Section 1.7 - Transformations of Functions



a. $y = |x| + 6$

b. $y = |x| - 5$

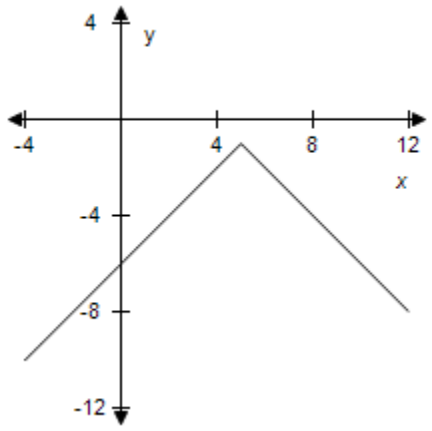
c. $y = |x| - 6$

d. $y = |x| + 7$

e. $y = |x| + 5$

ANSWER: e
POINTS: 1
REFERENCES: 2.5.17a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/15/2015 1:10 AM

14. Use the graph of $f(x) = |x|$ to write an equation for the function whose graph is shown.



a. $y = -|x + 5| - 1$

b. $y = |x + 5| + 1$

c. $y = -|x-5|+1$

d. $y = -|x-5|-1$

e. $y = |x-5|-1$

ANSWER: d
POINTS: 1
REFERENCES: 2.5.17d
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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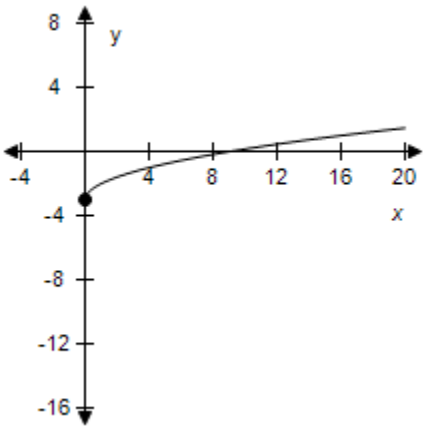
15. Use the graph of $f(x) = \sqrt{x}$ to write an equation for the function whose graph is shown.



a. $y = \sqrt{x}+5$

b. $y = \sqrt{x}-4$

c. $y = \sqrt{x}+4$

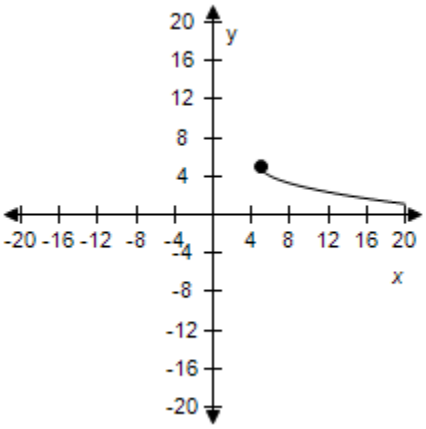
d. $y = \sqrt{x}-3$

e. $y = \sqrt{x}+3$

ANSWER: d
POINTS: 1
REFERENCES: 2.5.18a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/15/2015 1:12 AM

16. Use the graph of $f(x) = \sqrt{x}$ to write an equation for the function whose graph is shown.

Section 1.7 - Transformations of Functions



a. $y = \sqrt{x} + 5$

b. $y = -\sqrt{x-5} + 5$

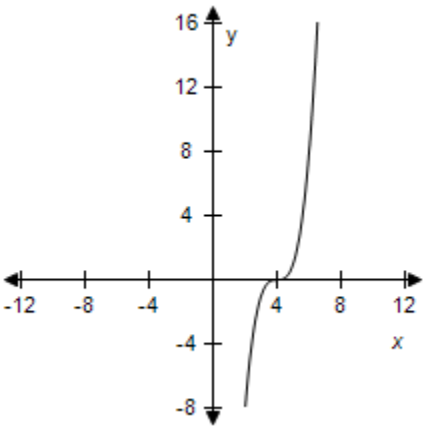
c. $y = \sqrt{x+5} + 5$

d. $y = -\sqrt{x} - 5$

e. None of the above

ANSWER: b
POINTS: 1
REFERENCES: 2.5.18c
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/15/2015 1:13 AM

17. Identify the parent function and the transformation shown in the graph. Write an equation for the function shown in the graph.



a. Horizontal shift of $y = x^3$; $y = (x-4)^3$

b. Vertical shift of $y = x^2; y = (x-4)^2$

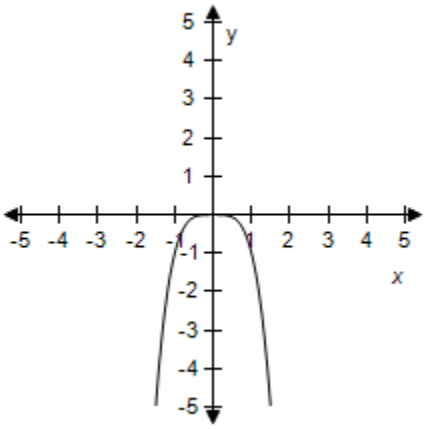
c. Vertical shift of $y = x^2; y = (x+4)^2$

d. Horizontal shift of $y = x^2; y = (x+4)^2$

e. Vertical shift of $y = x^3; y = (x+4)^3$

ANSWER: a
POINTS: 1
REFERENCES: 2.5.19
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/15/2015 1:13 AM

18. Identify the parent function and the transformation shown in the graph. Write an equation for the function shown in the graph.



a. Horizontal shift of the x-axis of $y = x^4; \ y = -x^4$

b. Vertical shift of the y-axis of $y = x^4; \ y = -x^4$

c. Reflection in the x-axis of $y = x^4; \ y = -x^4$

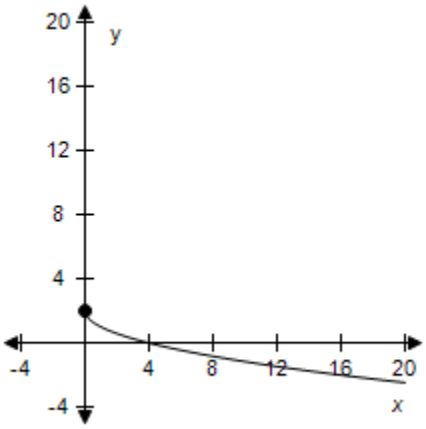
d. Horizontal shift of the y-axis of $y = x^4; \ y = -x^4$

e. Vertical shift of the x-axis of $y = x^4; \ y = -x^4$

ANSWER: c
POINTS: 1
REFERENCES: 2.5.21
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/15/2015 1:15 AM

Section 1.7 - Transformations of Functions

19. Identify the parent function and the transformation shown in the graph. Write an equation for the function shown in the graph.



a. Reflection in the *x*-axis and vertical shift of $y = \sqrt{x}; y = 2 - \sqrt{x}$

b. Vertical shift of *x*-axis and vertical shift of $y = \sqrt{x}; y = 2 + \sqrt{x}$

c. Reflection in the *x*-axis and vertical shift of $y = \sqrt{x}; y = 2 + \sqrt{x}$

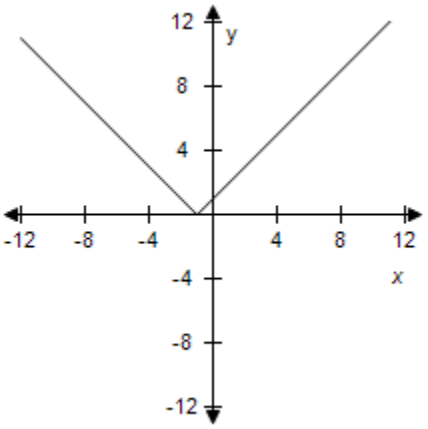
d. Horizontal shift of *x*-axis and vertical shift of $y = \sqrt{x}; y = 2 + \sqrt{x}$

e. Horizontal shift of *x*-axis and vertical shift of $y = \sqrt{x}; y = 2 - \sqrt{x}$

ANSWER: a
POINTS: 1
REFERENCES: 2.5.23
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/15/2015 1:17 AM

20. Identify the parent function and the transformation shown in the graph. Write an equation for the function shown in the graph.

Section 1.7 - Transformations of Functions



a. Reflection in the x-axis of $y = |x-1|; y = -|x-1|$

b. Horizontal shift of x-axis of $y = |x|; y = |x+1|$

c. Reflection in the y-axis of $y = |x|; y = -|x-1|$

d. Horizontal shift of x-axis of $y = |x+1|; y = -|x+1|$

e. Reflection in the y-axis of $y = |x+1|; y = -|x+1|$

ANSWER: b
POINTS: 1
REFERENCES: 2.5.24
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/15/2015 1:21 AM

21. Identify the parent function f. The parent function is related to g.

$g(x) = 4+x^2$

a. Absolute Value Function, $f(x) = |x|$

b. Constant Function, $f(x) = 4$

c. Identity Function, $f(x) = x$

d. Quadratic Function, $f(x) = x^2$

e. Cubic Function, $f(x) = x^3$

ANSWER: d
POINTS: 1
REFERENCES: 2.5.25a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM

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DATE MODIFIED: 9/30/2014 8:33 AM

22. The parent function $f(x) = x^2$ is related to *g*. Describe the sequence of transformations from *f* to *g*.

$g(x) = 3 - x^2$

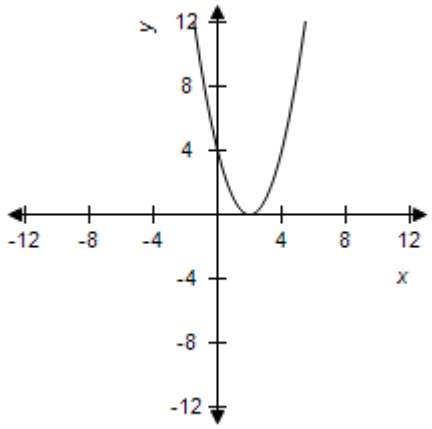
a. Reflection in the *y*-axis and vertical shift 3 units upward.
b. Vertical shift of the *x*-axis and vertical shift 3 units upward.
c. Reflection in the *x*-axis and vertical shift 3 units upward.
d. Reflection in the *x*-axis and vertical shift 3 units downward.
e. Reflection in the *y*-axis and vertical shift 3 units downward.

ANSWER: c
POINTS: 1
REFERENCES: 2.5.25b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 12:08 PM

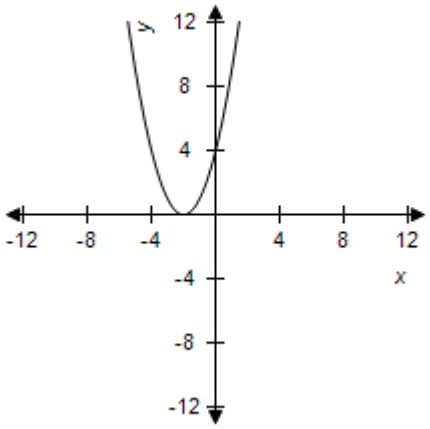
23. Select the graph of *g*.

$g(x) = (x - 2)^2$

a.



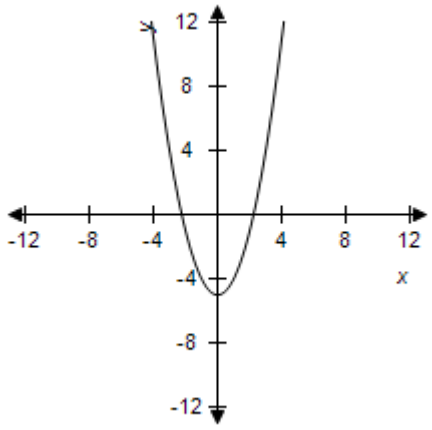
b.

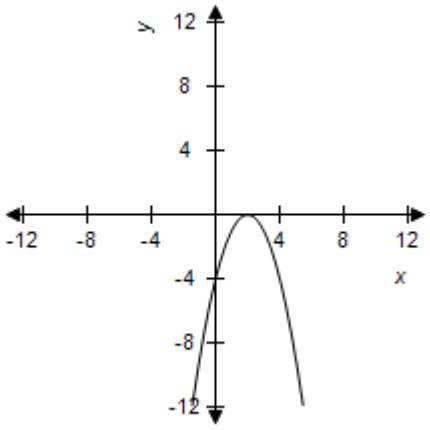


c.

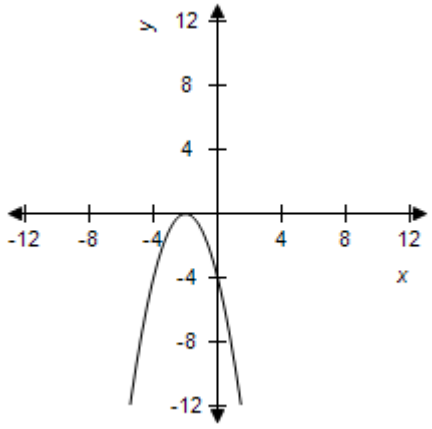
d.

Section 1.7 - Transformations of Functions





e.



ANSWER: a
POINTS: 1
REFERENCES: 2.5.26c
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/30/2014 8:41 AM

24. The parent function $f(x) = x^3$ is related to g. Use function notation to write g in terms of f.

$g(x) = x^3 + 4$

a. $g(x) = x^3 + f(x)$
b. $g(x) = x^3 - f(x)$
c. $g(x) = f(x) - 4$
d. $g(x) = x^3$
e. $g(x) = f(x) + 4$

ANSWER: e

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POINTS: 1
REFERENCES: 2.5.27d
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 12:09 PM

25. Function g is related to the parent function. Identify the parent function f.

$g(x) = -x^3 - 2$

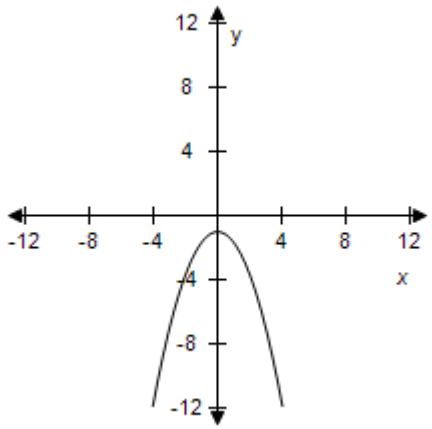
a. Identity Function, $f(x) = x$
b. Cubic Function, $f(x) = x^3$
c. Absolute Value Function, $f(x) = |x|$
d. Quadratic Function, $f(x) = x^2$
e. Constant Function, $f(x) = 2$

ANSWER: b
POINTS: 1
REFERENCES: 2.5.28a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 12:12 PM

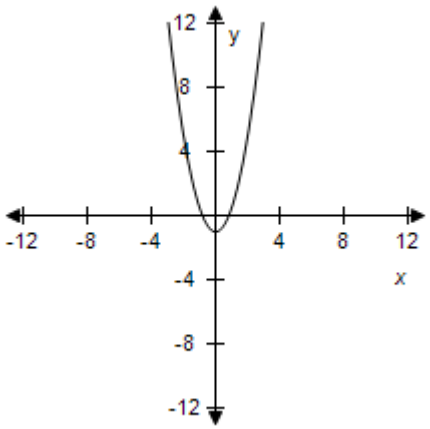
26. Select the graph of g.

$g(x) = \frac{2}{3}x^2 + 1$

a.

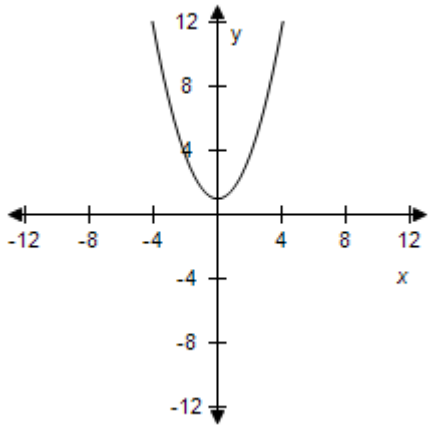


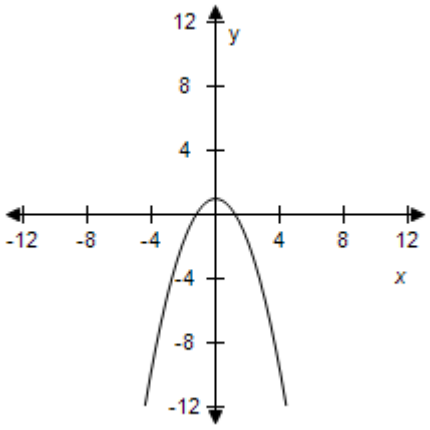
b.



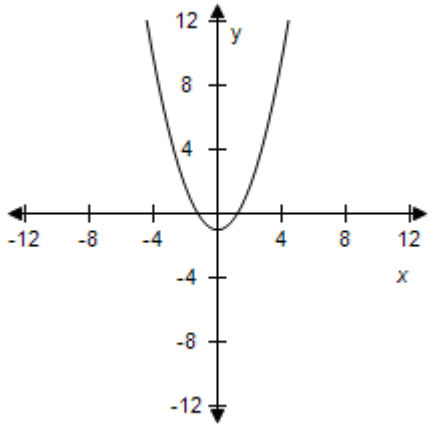
c.

d.





e.



ANSWER: c
POINTS: 1
REFERENCES: 2.5.29c
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/15/2015 1:33 AM

27. The parent function $f(x) = x^2$ is related to *g*. Use function notation to write *g* in terms of *f*.

$g(x) = 2 - (x + 6)^2$

a. $g(x) = 2 + f(x - 6)$
b. $g(x) = 2 - f(x - 6)$
c. $g(x) = 2 + f(x + 6)$
d. $g(x) = 2 - f(x + 6)$
e. $g(x) = -2 - f(x - 6)$

ANSWER: d
POINTS: 1

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REFERENCES: 2.5.31d
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 12:14 PM

28. Function g is related to the parent function. Identify the parent function f.

$g(x) = \sqrt{6x}$

a. Square Root Function, $f(x) = \sqrt{x}$
b. Identity Function, $f(x) = x$
c. Quadratic Function, $f(x) = x^2$
d. Cubic Function, $f(x) = x^3$
e. Reciprocal Function, $f(x) = \frac{1}{x}$

ANSWER: a
POINTS: 1
REFERENCES: 2.5.35a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 12:17 PM

29. The parent function $f(x) = x^3$ is related to g. Use function notation to write g in terms of f.

$g(x) = (x-1)^3 + 1$

a. $g(x) = f(x-1) - 1$
b. $g(x) = f(x+1) + 1$
c. $g(x) = f(x-1) + 1$
d. $g(x) = f(x+1) - 1$
e. None of the above

ANSWER: c
POINTS: 1
REFERENCES: 2.5.37d
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 12:17 PM

30. Select the graph of g.

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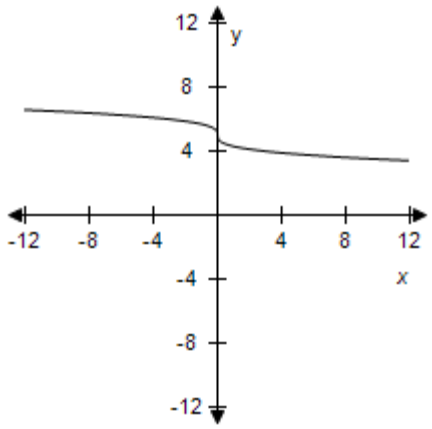
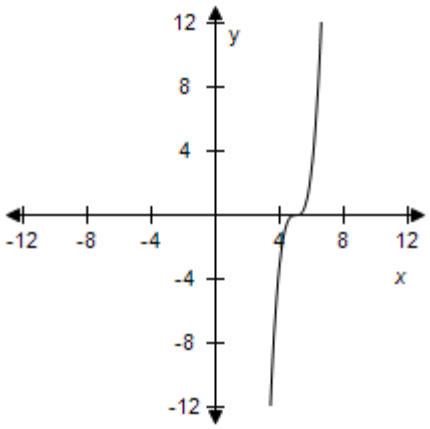
$g(x) = 3(x-5)^3$

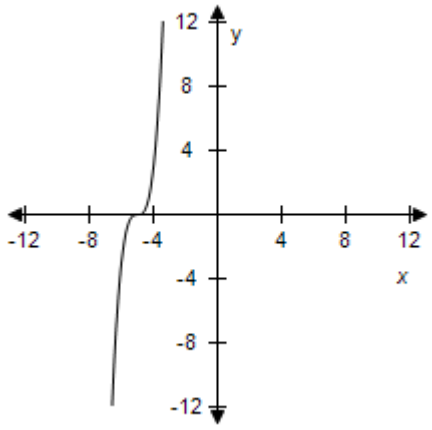
a.



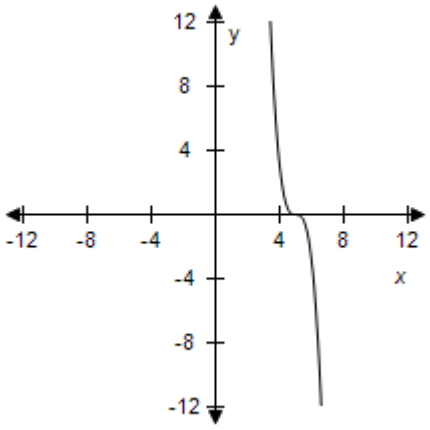
b.



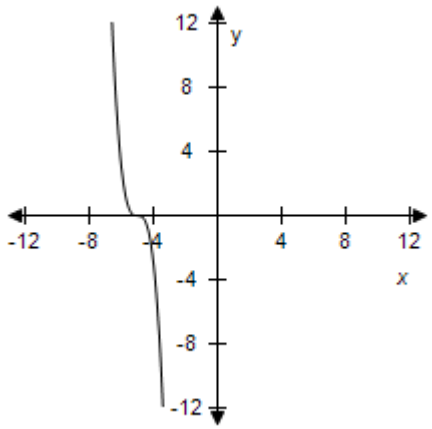
c.



d.



e.



ANSWER: b
POINTS: 1
REFERENCES: 2.5.39c
QUESTION TYPE: Multi-Mode (Multiple choice)

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HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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31. The parent function $f(x) = |x|$ is related to g. Describe the sequence of transformations from f to g.

$g = -|x| - 5$

a. Reflection in the y-axis and vertical shift five units downward.
b. Reflection in the x-axis and vertical shift five units downward.
c. Reflection in the x-axis and vertical shift five units upward.
d. Reflection in the y-axis and vertical shift five units upward.
e. Vertical shift of the x-axis and vertical shift five units downward.

ANSWER: b
POINTS: 1
REFERENCES: 2.5.41b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 12:22 PM

32. Function g is related to the parent function. Identify the parent function f.

$g(x) = -|x+3| + 6$

a. Reciprocal Function, $f(x) = \frac{1}{x}$
b. Quadratic Function, $f(x) = x^2$
c. Absolute Value Function, $f(x) = |x|$
d. Cubic Function, $f(x) = x^3$
e. Constant Function, $f(x) = 3$

ANSWER: c
POINTS: 1
REFERENCES: 2.5.43a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 12:22 PM

33. The parent function $f(x) = |x|$ is related to g. Use function notation to write g in terms of f.

$g(x) = -5|x-5| - 3$

a. $g(x) = 5f(x-5)-3$
b. $g(x) = -5f(x-5)+3$
c. $g(x) = -5f(x-5)-3$
d. $g(x) = 5f(x+5)+3$
e. $g(x) = -5f(x+5)-3$

ANSWER: c
POINTS: 1
REFERENCES: 2.5.45d
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 12:24 PM

34. Function g is related to the parent function. Identify the parent function f.

$g(x) = 4-[[x]]$

a. Quadratic Function, $f(x) = x^2$
b. Greatest Integer Function, $f(x) = [[x]]$
c. Constant Function, $f(x) = 4$
d. Square Root Function, $f(x) = \sqrt{x}$
e. Absolute Value Function, $f(x) = |x|$

ANSWER: b
POINTS: 1
REFERENCES: 2.5.47a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/12/2015 12:25 PM

35. The parent function $f(x) = \sqrt{x}$ is related to g. Describe the sequence of transformations from f to g.

$g(x) = \sqrt{x-3}$

a. Horizontal stretch and vertical shift three units downward.
b. Vertical shift three units to the right.
c. Vertical stretch three units to the left.
d. Horizontal stretch and vertical shift three units upward.
e. Horizontal shift three units to the right.

ANSWER: e

Section 1.7 - Transformations of Functions

POINTS: 1
REFERENCES: 2.5.49b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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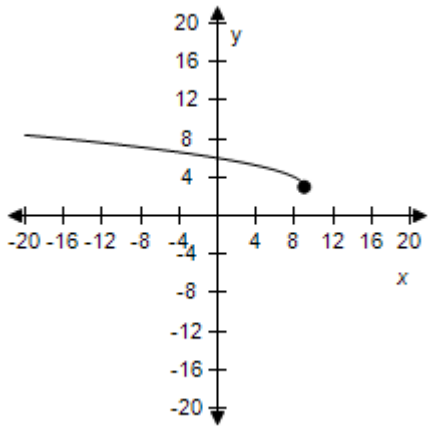
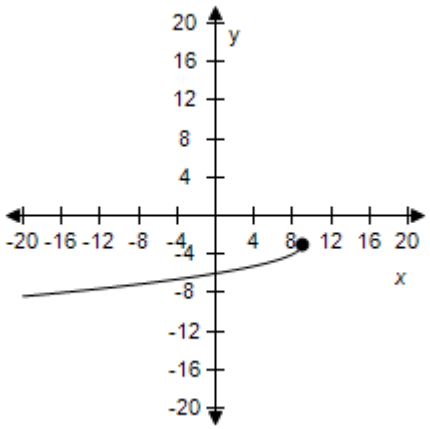
36. Select the graph of g.

$g(x) = \sqrt{9 - x} - 3$

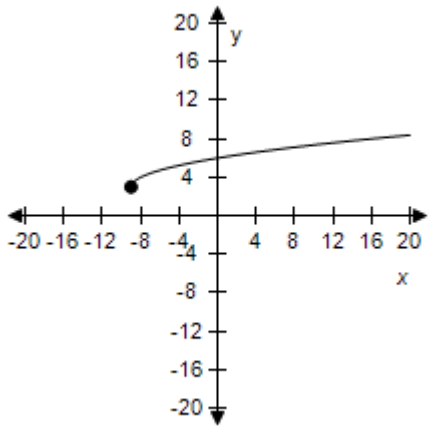
a.



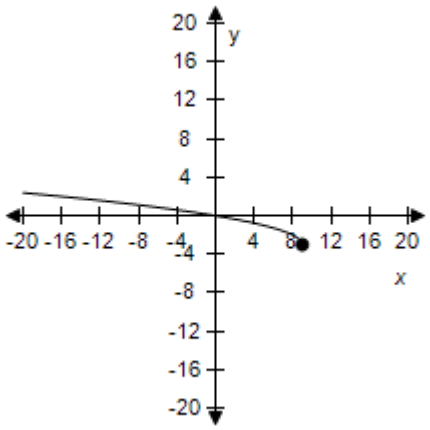
b.



c.

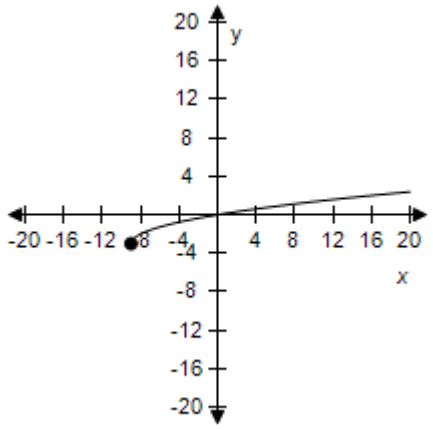


d.



e.

Section 1.7 - Transformations of Functions



ANSWER: d
POINTS: 1
REFERENCES: 2.5.51c
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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37. The parent function $f(x) = \sqrt{x}$ is related to g. Use function notation to write g in terms of f.

$$g(x) = \sqrt{\frac{1}{3}x - 9}$$

a. $g(x) = f\left(\frac{1}{3}x\right) - 9$

b. $g(x) = f\left(\frac{1}{3}\right) + 9$

c. $g(x) = f\left(\frac{1}{3}x\right) + 9$

d. $f(x) = g\left(\frac{1}{3}x\right) - 9$

e. $g(x) = f\left(\frac{1}{3}\right) - 9$

ANSWER: a
POINTS: 1
REFERENCES: 2.5.53d
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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38. Write an equation for the function that is described by the given characteristic.

The shape of $f(x) = x^2$, but shifted three units to the right and five units downward.

a. $g(x) = (x-3)^2-5$

b. $g(x) = (x^2-3)-5$

c. $g(x) = (x+3)^2-5$

d. $g(x) = (x+3)^2+5$

e. $g(x) = (x-3)^2+5$

ANSWER: a
POINTS: 1
REFERENCES: 2.5.55
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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39. Write an equation for the function that is described by the given characteristic.

The shape of $f(x) = x^3$, but shifted 17 units to the right.

a. $g(x) = (x+17)$

b. $g(x) = -(x-17)^3$

c. $g(x) = (x+17)^3$

d. $g(x) = (x-17)^3$

e. $g(x) = -(x+17)^3$

ANSWER: d
POINTS: 1
REFERENCES: 2.5.57
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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40. Write an equation for the function that is described by the given characteristic.

The shape of $f(x) = \sqrt{x}$, but shifted three units to the left and reflected in both the x-axis and the y-axis.

a. $g(x) = \sqrt{-x+3}$

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b. $g(x) = -\sqrt{x+3}$

c. $g(x) = -\sqrt{-x+3}$

d. $g(x) = \sqrt{x+3}$

e. $g(x) = -\sqrt{-x-3}$

ANSWER: c
POINTS: 1
REFERENCES: 2.5.61
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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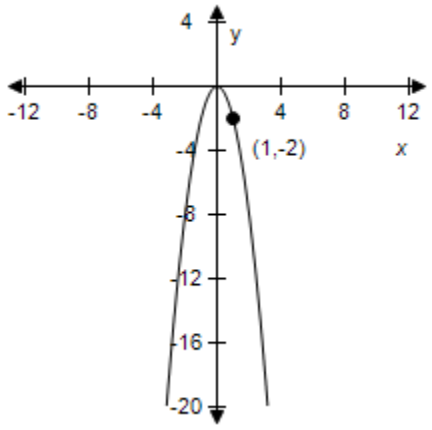
41. Use the graph of $f(x) = x^2$ to write an equation for the function whose graph is shown.



a. $y = -2x^2$

b. $y = x^2$

c. $y = -\dfrac{x^2}{2}$

d. $y = \dfrac{x^2}{2}$

e. $y = 2x^2$

ANSWER: a
POINTS: 1
REFERENCES: 2.5.63a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True

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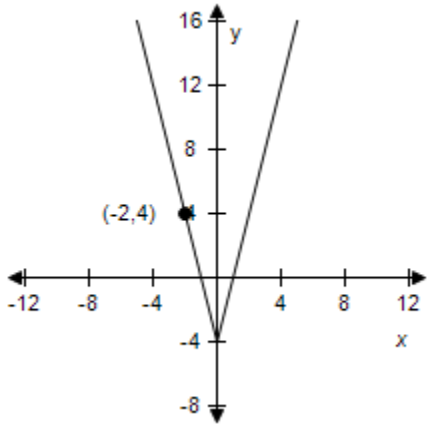
42. Use the graph of $f(x) = |x|$ to write an equation for the function whose graph is shown.



a. $y = 4|x| - 4$

b. $y = -4|x| - 4$

c. $y = -4||x|| - 4$

d. $y = 4|x| + 4$

e. $y = -4|x| + 4$

ANSWER: a
POINTS: 1
REFERENCES: 2.5.65b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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43. Identify the parent function and the transformation shown in the graph. Write an equation for the function shown in the graph.

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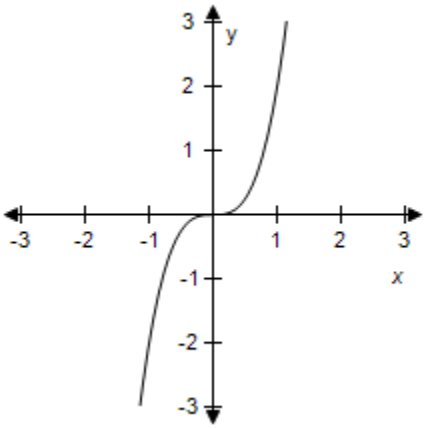


a. Vertical stretch of $y = x^2;\ y = 2x^2$

b. Horizontal stretch of $y = x^3;\ y = 2x^3$

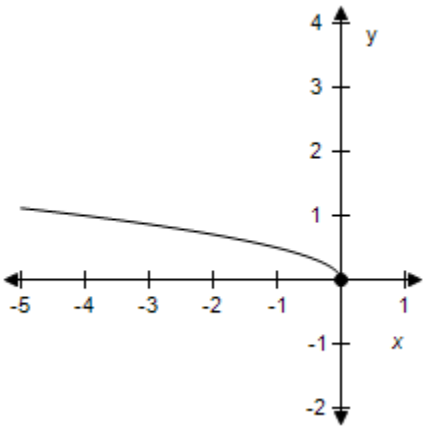
c. Vertical stretch of $y = x^3;\ y = 2x^3$

d. Vertical stretch of $y = x^3;\ y = -2x^3$

e. Horizontal stretch of $y = x^3;\ y = -2x^3$

ANSWER: c
POINTS: 1
REFERENCES: 2.5.67
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/15/2015 1:49 AM

44. Identify the parent function and the transformation shown in the graph. Write an equation for the function shown in the graph.



Section 1.7 - Transformations of Functions

a. Reflection in the *y*-axis and vertical shrink of $y = \sqrt{x};\ y = \frac{1}{2}\sqrt{-x}$.

b. Reflection in the *y*-axis and vertical shrink of $y = \sqrt{-x};\ y = \frac{1}{2}\sqrt{x}$.

c. Reflection in the *y*-axis and vertical shrink of $y = \sqrt{-x};\ y = -\frac{1}{2}\sqrt{x}$.

d. Reflection in the *y*-axis and vertical shrink of $y = \sqrt{x};\ y = -\frac{1}{2}\sqrt{-x}$.

e. Reflection in the *y*-axis and vertical shrink of $y = \sqrt{x};\ y = \frac{1}{2}\sqrt{x}$.

ANSWER: a
POINTS: 1
REFERENCES: 2.5.71
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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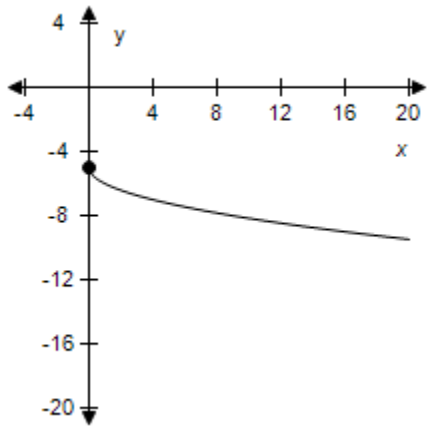
45. Use the viewing window shown to select a possible equation for the transformation of the parent function.



a. $y = \sqrt{x} - 5$

b. $y = -\sqrt{x} + 5$

c. $y = -\sqrt{x} - 5$

d. $y = \sqrt{x} + 5$

e. $y = -\sqrt{x} - 6$

ANSWER: c
POINTS: 1
REFERENCES: 2.5.75

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QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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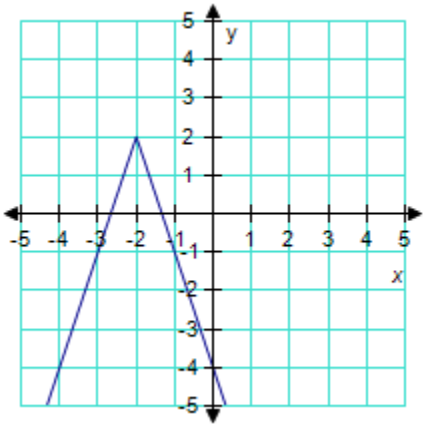
46. Determine whether the statement is true or false. Justify your answer.

The graphs of $f(x) = |x| + 5$ and $f(x) = |-x| + 5$ are identical.

a. False. $|x| \neq |-x|$
b. True. $|x| = |-x|$

ANSWER: b
POINTS: 1
REFERENCES: 2.5.83
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/1/2014 6:56 AM

47. Use the graph of $f(x) = |x|$ to write an equation for the function whose graph is shown.



a. $f(x) = -3|x-2|+2$
b. $f(x) = -3|x+2|+2$
c. $f(x) = |-3x+2|+2$
d. $f(x) = -3|x+2|-2$
e. $f(x) = |-3x-2|+2$

ANSWER: b
POINTS: 1
REFERENCES: 2.5.17
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
LEARNING OBJECTIVES: PREC.LARS.16.128 - Write equations for transformations of common functions

Section 1.7 - Transformations of Functions

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48. Describe the sequence of transformations from the related common function $f(x) = x^3$ to g.

$g(x) = 2(x-4)^3$

a. Vertical shift 4 units up; then vertical shrink by a factor of 2.
b. Horizontal shift 4 units left; then vertical shrink by a factor of 2.
c. Horizontal shift 4 units right; then vertical stretch by a factor of 2.
d. Vertical shift 4 units down; then vertical shrink by a factor of 2.
e. Horizontal shift 4 units left; then vertical stretch by a factor of 2.

ANSWER: c
POINTS: 1
REFERENCES: 2.5.26
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
LEARNING OBJECTIVES: PREC.LARS.16.129 - Recognize transformed graphs of common functions
DATE CREATED: 6/10/2014 4:18 PM
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49. Write an equation for the function that is described by the following characteristics.

The shape of $f(x) = x^2$, but moved five units down, four units to the left, and then reflected in the x-axis.

a. $g(x) = 4-(x+5)^2$
b. $g(x) = -(x+4)^2-5$
c. $g(x) = 5-(x+4)^2$
d. $g(x) = -(x+5)^2-4$
e. $g(x) = 5-(x-4)^2$

ANSWER: c
POINTS: 1
REFERENCES: 2.5.58
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
LEARNING OBJECTIVES: PREC.LARS.16.128 - Write equations for transformations of common functions
DATE CREATED: 6/10/2014 4:18 PM
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50. Write an equation for the function that is described by the following characteristics.

The shape of $f(x) = [[x]]$, but reflected in the y-axis, moved eight units down.

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a. $g(x) = [[-x]] + 8$
b. $g(x) = -[[x - 8]]$
c. $g(x) = -[[x + 8]]$
d. $g(x) = [[-x]] - 8$
e. $g(x) = -[[x]] + 8$

ANSWER: d
POINTS: 1
REFERENCES: 2.5.60
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
LEARNING OBJECTIVES: PREC.LARS.16.128 - Write equations for transformations of common functions
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51. Describe the sequence of transformations from the related common function $f(x) = x^3$ to *g*.

$g(x) = 2(x - 8)^3$

a. Horizontal shift 8 units right; then vertical stretch by a factor of 2.
b. Horizontal shift 8 units left; then vertical stretch by a factor of 2.
c. Horizontal shift 8 units left; then vertical shrink by a factor of 2.
d. Vertical shift 8 units up; then vertical shrink by a factor of 2.
e. Vertical shift 8 units down; then vertical shrink by a factor of 2.

ANSWER: a
POINTS: 1
REFERENCES: 42
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
LEARNING OBJECTIVES: PREC.LARS.16.129 - Recognize transformed graphs of common functions
DATE CREATED: 6/10/2014 4:18 PM
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52. Describe the sequence of transformations from the related common function $f(x) = \sqrt{x}$ to *g*.

$g(x) = -\sqrt{x} + 3$

a. Reflection in the *x*-axis; then vertical shift 3 units down.
b. Reflection in the *x*-axis; then vertical shift 3 units up.
c. Reflection in the *y*-axis; then vertical shift 3 units up.
d. Reflection in the *y*-axis; then horizontal shift 3 units right.
e. Reflection in the *y*-axis; then horizontal shift 3 units left.

ANSWER: b

Section 1.7 - Transformations of Functions

POINTS:	1
REFERENCES:	43
QUESTION TYPE:	Multi-Mode (Multiple choice)
HAS VARIABLES:	True
LEARNING OBJECTIVES:	PREC.LARS.16.129 - Recognize transformed graphs of common functions
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Section 1.8 - Combinations of Functions: Composite Functions

1. Find $(f + g)(x)$.

$f(x) = x + 4,\ g(x) = x - 4$

a. $2x$
b. $4x$
c. $-4x$
d. $-2x$
e. $2x + 8$

ANSWER: a
POINTS: 1
REFERENCES: 2.6.9a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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2. Find $(f - g)(x)$.

$f(x) = x + 3,\ g(x) = x - 3$

a. $2x - 6$
b. 6
c. $2x - 3$
d. $2x + 6$
e. $2x$

ANSWER: b
POINTS: 1
REFERENCES: 2.6.9b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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3. Find $(f + g)(x)$.

$f(x) = 2x - 3,\ g(x) = 4 - x$

a. $3x - 1$
b. $2x - 1$
c. $2x + 1$
d. $3x + 1$
e. $x + 1$

ANSWER: e
POINTS: 1

Section 1.8 - Combinations of Functions: Composite Functions

REFERENCES: 2.6.10a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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4. Find $(f - g)(x)$.

$f(x) = 2x - 2,\ g(x) = 4 - x$

a. $3x - 6$
b. $2x + 6$
c. $2x - 6$
d. $x - 6$
e. $3x + 6$

ANSWER: a
POINTS: 1
REFERENCES: 2.6.10b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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5. Find $(fg)(x)$.

$f(x) = x^2,\ g(x) = 7x - 7$

a. $7x^3 + 7x^2$
b. $7x^3 - 7x^2$
c. $7x^2 - 7x^3$
d. $7x^2 + 7x^3$
e. $7x - 7x^2$

ANSWER: b
POINTS: 1
REFERENCES: 2.6.11c
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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6. Find $(f / g)(x)$. What is the domain of f / g?

Section 1.8 - Combinations of Functions: Composite Functions

$f(x) = x^2, g(x) = 7x - 3$

a. $-\dfrac{x^2}{7x-3}$; all real numbers x.

b. $\dfrac{7x+3}{x^2}$; all real numbers x except $x = 0$

c. $\dfrac{x^2}{7x-3}$; all real numbers x except $x = \dfrac{3}{7}$

d. $\dfrac{7x-3}{x^2}$; all real numbers x except $x = 0$

e. $\dfrac{x^2}{7x+3}$; all real numbers x except $x = \dfrac{7}{3}$

ANSWER: c
POINTS: 1
REFERENCES: 2.6.11d
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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7. Find $(f + g)(x)$.

$f(x) = x^2 + 4, g(x) = \sqrt{7-x}$

a. $x^2 + 4 - \sqrt{7-x}$

b. $x^2 + 4 + \sqrt{7-x}$

c. $x^2 - 4 + \sqrt{7+x}$

d. $x^2 - 4 - \sqrt{7-x}$

e. $x^2 - 4 + \sqrt{7-x}$

ANSWER: b
POINTS: 1
REFERENCES: 2.6.13a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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8. Find $(f - g)(x)$.

Section 1.8 - Combinations of Functions: Composite Functions

$f(x)=x^2+3, g(x)=\sqrt{5-x}$

a. $x^2+3+\sqrt{5-x}$

b. $x^2-3+\sqrt{5-x}$

c. $x^2-3+\sqrt{5+x}$

d. $x^2+3-\sqrt{5-x}$

e. $x^2-3-\sqrt{5-x}$

ANSWER: d
POINTS: 1
REFERENCES: 2.6.13b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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9. Find $(fg)(x)$.

$f(x)=\frac{1}{x^2}, g(x)=\frac{1}{x^4}$

a. $\frac{1}{x^4}$

b. $\frac{1}{x^2}$

c. $\frac{1}{x^6}$

d. x^6

e. $\frac{x^4}{x^2}$

ANSWER: c
POINTS: 1
REFERENCES: 2.6.15c
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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10. Find $(f/g)(x)$.

Section 1.8 - Combinations of Functions: Composite Functions

$f(x) = \frac{1}{x^2}, g(x) = \frac{1}{x^4}$

a. $\frac{1}{x^2}$

b. x^6

c. $\frac{1}{x^4}$

d. $\frac{1}{x^6}$

e. x^2

ANSWER: e
POINTS: 1
REFERENCES: 2.6.15d
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/15/2015 9:37 AM

11. Evaluate the indicated function for $f(x) = x^2 + 2$ and $g(x) = x - 4$.

$(f + g)(3)$

a. 12
b. –10
c. 7
d. 14
e. 10

ANSWER: e
POINTS: 1
REFERENCES: 2.6.17
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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12. Evaluate the indicated function for $f(x) = x^2 + 2$ and $g(x) = x - 6$.

$(f - g)(-5)$

a. 28
b. 38

c. –38
d. 125
e. 17

ANSWER: b
POINTS: 1
REFERENCES: 2.6.18
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/29/2014 6:10 AM

13. Evaluate the indicated function for $f(x)=x^2+3$ and $g(x)=x-6$.

$(f-g)(0)$

a. 48
b. 39
c. 9
d. 0
e. –39

ANSWER: c
POINTS: 1
REFERENCES: 2.6.19
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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14. Evaluate the indicated function for $f(x)=x^2+3$ and $g(x)=x-4$.

$(f-g)(3t)$

a. $9t^2+3t+7$
b. $6t+7$
c. $9t^2+3t-7$
d. $9t^2-3t-7$
e. $9t^2-3t+7$

ANSWER: e
POINTS: 1
REFERENCES: 2.6.21

Section 1.8 - Combinations of Functions: Composite Functions

QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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15. Evaluate the indicated function for $f(x)=x^2+5$ and $g(x)=x-2$.

$(fg)(5)$

a. 92
b. 90
c. –86
d. 89
e. 91

ANSWER: b
POINTS: 1
REFERENCES: 2.6.23
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/29/2014 6:19 AM

16. Evaluate the indicated function for $f(x)=x^2+5$ and $g(x)=x-4$.

$(f/g)(5)$

a. 30
b. $\frac{5}{34}$
c. $\frac{32}{3}$
d. $\frac{2}{31}$
e. $\frac{34}{5}$

ANSWER: a
POINTS: 1
REFERENCES: 2.6.25
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/29/2014 6:24 AM

Section 1.8 - Combinations of Functions: Composite Functions

17. Evaluate the indicated function for $f(x)=x^2+6$ and $g(x)=x-5$.

$(f/g)(-4)-g(6)$

a. $-\frac{5}{26}$
b. $-\frac{31}{9}$
c. $-\frac{9}{13}$
d. $-\frac{13}{9}$
e. $-\frac{9}{31}$

ANSWER: b
POINTS: 1
REFERENCES: 2.6.27
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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18. Find $f \circ g$.

$f(x)=x^2, g(x)=x-2$

a. x^2
b. $(x-2)^2$
c. $(x+2)^2$
d. (x^2-2)
e. (x^2+2)

ANSWER: b
POINTS: 1
REFERENCES: 2.6.37a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/29/2014 6:34 AM

19. Find $g \circ f$.

$f(x)=x^2, g(x)=x-4$

a. $x^2 - 4$

b. x^2

c. $(x-4)^2$

d. (x^2+4)

e. $(x+4)^2$

ANSWER: a
POINTS: 1
REFERENCES: 2.6.37b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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20. Find $g \circ g$.

$g(x) = x - 2$

a. $(x-2)^2$

b. $x^2 - 2$

c. $x + 4$

d. $-x - 4$

e. $x - 4$

ANSWER: e
POINTS: 1
REFERENCES: 2.6.37c
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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21. Find $f \circ g$ and the domain of the composite function.

$f(x) = \sqrt{x+5}$, $g(x) = x^2$

a. $(x+5)^2$

Domain of $f \circ g$: all real numbers x

b. $\sqrt{x^2+5}$

Domain of $f \circ g$: all real numbers x

c. $-\sqrt{(x+5)^2}$

Domain of $f \circ g$: all real numbers x

d. $(x-5)^2$

Domain of $f \circ g$: all real numbers x

e. $\sqrt{(x-5)^2}$

Domain of $f \circ g$: all real numbers x

ANSWER: b
POINTS: 1
REFERENCES: 2.6.41a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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22. Find $g \circ f$ and the domain of the composite function.

$f(x) = x^2 + 4,\ g(x) = \sqrt{x}$

a. $(x+4)^4$

Domain of $g \circ f$: all real numbers x

b. $(x-4)^4$

Domain of $g \circ f$: all real numbers x

c. $\sqrt{x^2+4}$

Domain of $g \circ f$: all real numbers x

d. $\sqrt{(x-4)^4}$

Domain of $g \circ f$: all real numbers x

e. $\sqrt{(x+4)^4}$

Domain of $g \circ f$: all real numbers x

ANSWER: c
POINTS: 1
REFERENCES: 2.6.43b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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23. Find $f \circ g$ and the domain of the composite function.

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$f(x) = |x|,\ g(x) = x + 3$

a. $|(x-3)^3|$

Domain of $f \circ g$: all real numbers x

b. $\sqrt{(x+3)^3}$

Domain of $f \circ g$: all real numbers x

c. $|x+3|$

Domain of $f \circ g$: all real numbers x

d. $|(x+3)^3|$

Domain of $f \circ g$: all real numbers x

e. $|x-3|$

Domain of $f \circ g$: all real numbers x

ANSWER: c
POINTS: 1
REFERENCES: 2.6.45a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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24. Find $g \circ f$ and the domain of the composite function.

$f(x) = |x|,\ g(x) = x + 4$

a. $|x-4|$

Domain of $g \circ f$: all real numbers x

b. $x - |4|$

Domain of $g \circ f$: all real numbers x

c. $|x| - 4$

Domain of $g \circ f$: all real numbers x

d. $|x| + 4$

Domain of $g \circ f$: all real numbers x

e. $|x+4|$

Domain of $g \circ f$: all real numbers x

ANSWER: d
POINTS: 1
REFERENCES: 2.6.45b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM

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25. Find $f \circ g$ and the domain of the composite function.

$f(x) = \frac{1}{x}, g(x) = x + 7$

a. $\frac{1}{x} + 7$

Domain of $f \circ g$: all real numbers x except $x = 0$

b. $-\frac{1}{x + 7}$

Domain of $f \circ g$: all real numbers x except $x = -7$

c. $\frac{1}{x + 7}$

Domain of $f \circ g$: all real numbers x except $x = -7$

d. $\frac{1}{x} - 7$

Domain of $f \circ g$: all real numbers x except $x = 0$

e. $\frac{1}{x - 7}$

Domain of $f \circ g$: all real numbers x except $x = 7$

ANSWER: c
POINTS: 1
REFERENCES: 2.6.47a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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26. Find $g \circ f$ and the domain of the composite function.

$f(x) = \frac{1}{x}, g(x) = x + 5$

a. $\frac{1}{x + 5}$

Domain of $g \circ f$: all real numbers x except $x = -5$

b. $\frac{1}{x} - 5$

Domain of $g \circ f$: all real numbers x except $x = 0$

c. $\frac{1}{x} + 5$

Domain of $g \circ f$: all real numbers x except $x = 0$

d. $-\dfrac{1}{x+5}$

Domain of $g \circ f$: all real numbers x except $x = -3$

e. $\dfrac{1}{x-5}$

Domain of $g \circ f$: all real numbers x except $x = 5$

ANSWER: c
POINTS: 1
REFERENCES: 2.6.47b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/15/2015 10:55 AM

27. The research and development department of an automobile manufacturer has determined that when a driver is required to stop quickly to avoid an accident, the distance (in feet) the car travels during the driver's reaction time is given by $R(x) = \dfrac{5}{2}x$, where x is the speed of the car in miles per hour. The distance (in feet) traveled while the driver is braking is given by $B(x) = \dfrac{1}{11}x^2$. Find the function that represents the total stopping distance T.

a. $T = -\dfrac{5}{2}x + \dfrac{1}{11}x^2$

b. $T = \dfrac{5}{2}x - \dfrac{1}{11}x^2$

c. $T = \dfrac{5}{2}x^2 + \dfrac{1}{11}x^2$

d. $T = -\dfrac{5}{2}x - \dfrac{1}{11}x^2$

e. $T = \dfrac{5}{2}x + \dfrac{1}{11}x^2$

ANSWER: e
POINTS: 1
REFERENCES: 2.6.61a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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28. A pebble is dropped into a calm pond, causing ripples in the form of concentric circles. The radius (in feet)

of the outer ripple is $r(t) = 0.2t$, where t is the time in seconds after the pebble strikes the water. The area of the circle is given by the function $A(r) = \pi r^2$. Find and interpret $(A \circ r)(t)$.

a. $(A \circ r)(t) = 0.2\pi t$; $(A \circ r)(t)$ represents the area of the circle at time t.

b. $(A \circ r)(t) = 0.2\pi t^2$; $(A \circ r)(t)$ represents the area of the circle at time t.

c. $(A \circ r)(t) = 0.04\pi t$; $(A \circ r)(t)$ represents the area of the circle at time t.

d. $(A \circ r)(t) = 0.04\pi t^2$; $(A \circ r)(t)$ represents the area of the circle at time t.

e. $(A \circ r)(t) = 0.04\pi t^3$; $(A \circ r)(t)$ represents the area of the circle at time t.

ANSWER: d
POINTS: 1
REFERENCES: 2.6.71
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/27/2014 12:04 AM

29. From 2003 through 2008, the sales R_1 (in thousands of dollars) for one of two restaurants owned by the same parent company can be modeled by

$$R_1 = 480 - 6t - 0.6t^2,\ t = 3, 4, 5, 6, 7, 8$$

where $t = 3$ represents 2003. During the same six-year period, the sales R_2 (in thousands of dollars) for the second restaurant can be modeled by

$$R_2 = 259 + 0.77t,\ t = 3, 4, 5, 6, 7, 8$$

Write a function R_3 that represents the total sales of the two restaurants owned by the same parent company.

a. $R_3 = 739 - 5.23t^2 - 0.6t$

b. $R_3 = 739 - 5.23t + 0.6t^2$

c. $R_3 = 221 - 6.77t^2 - 0.6t$

d. $R_3 = 739 - 5.23t^2 + 0.6t$

e. $R_3 = 739 - 5.23t - 0.6t^2$

ANSWER: e
POINTS: 1
REFERENCES: 2.6.62a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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30. The total numbers of Navy personnel N (in thousands) and Marines personnel M (in thousands) from 2000 through 2007 can be approximated by the models

$N(t) = 0.193t^3 - 3.88t^2 + 15.9t + 370$ and $M(t) = 0.033t^3 - 0.21t^2 + 1.7t + 171$

where t represents the year, with $t = 0$ corresponding to 2000.

Find and interpret $(N + M)(t)$.

a. $(N+M)(t) = 0.226t^3 + 4.09t^2 - 17.6t - 541$, which represents the total number of Navy and Marines personnel combined.
b. $(N+M)(t) = 0.226t^3 + 4.09t^2 + 17.6t + 541$, which represents the total number of Navy and Marines personnel combined.
c. $(N+M)(t) = 0.226t^3 - 4.09t^2 - 17.6t - 541$, which represents the total number of Navy and Marines personnel combined.
d. $(N+M)(t) = 0.226t^3 - 4.09t^2 + 17.6t + 541$, which represents the total number of Navy and Marines personnel combined.
e. $(N+M)(t) = 0.226t^2 - 4.09t^3 - 17.6t + 541$, which represents the total number of Navy and Marines personnel combined.

ANSWER: d
POINTS: 1
REFERENCES: 2.6.65a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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31. The total numbers of Navy personnel N (in thousands) and Marines personnel M (in thousands) from 2000 through 2007 can be approximated by the models

$N(t) = 0.194t^3 - 7.88t^2 + 12.9t + 375$ and $M(t) = 0.031t^3 - 0.25t^2 + 6.7t + 173$

where t represents the year, with $t = 0$ corresponding to 2000.
Find and interpret $(N - M)(t)$.

a. $(N-M)(t) = 0.163t^3 + 7.63t^2 - 6.2t + 202$, which represents the difference between the number of Navy personnel and the number of Marines personnel.
b. $(N-M)(t) = 0.163t^3 - 7.63t^2 - 6.2t - 202$, which represents the difference between the number of Navy personnel and the number of Marines personnel.
c. $(N-M)(t) = 0.163t^3 - 7.63t^2 - 6.2t + 202$, which represents the difference between the number of Navy personnel and the number of Marines personnel.
d. $(N-M)(t) = 0.163t^3 + 7.63t^2 + 6.2t + 202$, which represents the difference between the number of

Navy personnel and the number of Marines personnel.

e. $(N-M)(t)=0.163t^3-7.63t^2+6.2t+202$, which represents the difference between the number of Navy personnel and the number of Marines personnel.

ANSWER: e
POINTS: 1
REFERENCES: 2.6.65b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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32. The number of people playing tennis T (in millions) in the United States from 2000 through 2007 can be approximated by the function

$$T(t)=0.0236t^4-0.3401t^3+6.556t^2-2.86t+26.8$$

and the U.S. population P (in millions) from 2000 through 2007 can be approximated by the function $P(t)=5.78t+221.5$, where t represents the year, with $t=0$ corresponding to 2000.

Find $h(t)=\dfrac{T(t)}{P(t)}$.

a. $h(t)=\dfrac{0.0236t^4-0.3401t^3-6.556t^2-2.86t+26.8}{5.78t+221.5}$

b. $h(t)=\dfrac{0.0236t^4-0.3401t^3+6.556t^2-2.86t+26.8}{5.78t+221.5}$

c. $h(t)=\dfrac{0.0236t^4-0.3401t^3-6.556t^2-2.86t-26.8}{5.78t-221.5}$

d. $h(t)=\dfrac{0.0236t^4-0.3401t^3+6.556t^2-2.86t+26.8}{5.78t-221.5}$

e. $h(t)=\dfrac{0.0236t^4+0.3401t^3+6.556t^2-2.86t+26.8}{5.78t+221.5}$

ANSWER: b
POINTS: 1
REFERENCES: 2.6.66a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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33. The number of people playing tennis T (in millions) in the United States from 2000 through 2007 can be approximated by the function

$$T(t) = 0.0235t^4 - 0.3401t^3 + 2.556t^2 - 6.86t + 23.8$$

and the U.S. population P (in millions) from 2000 through 2007 can be approximated by the function $P(t) = 5.8t + 224.5$, where t represents the year, with $t = 0$ corresponding to 2000.

Evaluate the function $h(t) = \dfrac{0.0235t^4 - 0.3401t^3 + 2.556t^2 - 6.86t + 23.8}{5.8t + 224.5}$ for $t = 0$ and 3.

a. $h(0) = 0.1060$, $h(3) = 0.0783$
b. $h(0) = 0.3060$, $h(3) = 0.2783$
c. $h(0) = –0.2060$, $h(3) = –0.1783$
d. $h(0) = 0.1783$, $h(3) = 0.2060$
e. $h(0) = –0.1060$, $h(3) = –0.0783$

ANSWER: a
POINTS: 1
REFERENCES: 2.6.66b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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34. The spread of a contaminant is increasing in a circular pattern on the surface of a lake. The radius of the contaminant can be modeled by $r(t) = 2.25\sqrt{t}$, where r is the radius in meters and t is the time in hours since contamination.

Find a function that gives the area A of the circular lake in terms of the time since the spread began.

a. $A \circ r(t) = 5.0625\pi\sqrt{t}$
b. $A \circ r(t) = 2.25\pi t$
c. $A \circ r(t) = 5.0625t$
d. $A \circ r(t) = 5.0625\sqrt{t}$
e. $A \circ r(t) = 5.0625\pi t$

ANSWER: e
POINTS: 1
REFERENCES: 2.6.72a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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35. The number N of bacteria in a refrigerated food is given by $N(T) = 10T^2 - 20T + 600,\ 1 \le T \le 20$ where T is

the temperature of the food in degrees Celsius. When the food is removed from refrigeration, the temperature of the food is given by $T(t) = 3t + 2,\ 0 \le t \le 6$ where t is the time in hours.
Find the bacteria count after 0.5 hour.

a. About 565 bacteria
b. About 793 bacteria
c. About 653 bacteria
d. About 390 bacteria
e. About 705 bacteria

ANSWER: c
POINTS: 1
REFERENCES: 2.6.73b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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36. The weekly cost C of producing units x in a manufacturing process is given by $C(x) = 30x + 750$. The number of units x produced in t hours is given by $x(t) = 70t$.

Find the cost of the units produced in 6 hours.

a. 11,855
b. 11,850
c. 11,846
d. 13,350
e. 11,854

ANSWER: d
POINTS: 1
REFERENCES: 2.6.74b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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37. Determine whether the statement is true or false.

If $f(x) = x + 1$ and $g(x) = 5x$, then $(f \circ g)(x) = (g \circ f)(x)$.

a. False
b. True

ANSWER: a
POINTS: 1
REFERENCES: 5.6.77

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QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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38. The suggested retail price of a new hybrid car is p dollars. The dealership advertises a factory rebate of $2000 .

Select a function R in terms of p giving the cost of the hybrid car after receiving the rebate from the factory.

a. $R(p)=2000-p$
b. $R(p)=p-2000$
c. $R(p)=p+2000$
d. $R(p)=p+1000$
e. $R(p)=p-1000$

ANSWER: b
POINTS: 1
REFERENCES: 2.6.76a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
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39. Consider the functions $f(x)=x^3$ and $g(x)=\sqrt{x}$.

Find f/g.

a. $x^3\sqrt{x}$
b. $\dfrac{\sqrt{x}}{x^2}$
c. $\dfrac{\sqrt{x}}{x^3}$
d. $\dfrac{x^2\sqrt{x}}{x}$
e. $x^2\sqrt{x}$

ANSWER: e
POINTS: 1
REFERENCES: 2.6.84a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM

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40. Find $(f+g)(x)$.

$f(x)=x^2-2x-1$

$g(x)=-3x^2+x-1$

a. $(f+g)(x)=4x^4-3x^2$

b. $(f+g)(x)=2x^2-x+2$

c. $(f+g)(x)=-2x^4-x^2-2$

d. $(f+g)(x)=4x^2-3x$

e. $(f+g)(x)=-2x^2-x-2$

ANSWER: e
POINTS: 1
REFERENCES: 2.6.11
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/26/2014 6:18 AM
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41. Find $(f/g)(x)$.

$f(x)=x^2-4x \quad g(x)=7-x$

a. $(f/g)(x)=\dfrac{x^2-4x}{7-x}, x\neq 0$

b. $(f/g)(x)=\dfrac{x-4}{7}, x\neq 0$

c. $(f/g)(x)=\dfrac{x^2}{7}+4, x\neq 0$

d. $(f/g)(x)=\dfrac{x^2-4x}{7-x}, x\neq 7$

e. $(f/g)(x)=\dfrac{x^2-4x}{7-x}, x\neq -7$

ANSWER: d
POINTS: 1
REFERENCES: 2.6.13
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True

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42. Find $(fg)(x)$.

$f(x) = \sqrt{3x} \quad g(x) = \sqrt{5x + 7}$

a. $(fg)(x) = \sqrt{8x + 7}$

b. $(fg)(x) = \sqrt{15x^2 + 7}$

c. $(fg)(x) = \sqrt{15x^2 + 21x}$

d. $(fg)(x) = x\sqrt{15} + \sqrt{21x}$

e. $(fg)(x) = x\sqrt{15 + 21x}$

ANSWER: c
POINTS: 1
REFERENCES: 2.6.14
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/29/2014 4:23 AM

43. Evaluate the indicated function for $f(x) = x^2 - 7$ and $g(x) = x + 8$.

$(f - g)(t + 8)$

a. $t^2 + 15t + 57$

b. $t^2 + 15t + 41$

c. $t^2 + 17t + 41$

d. $t^2 - t + 41$

e. $t^2 + 17t + 57$

ANSWER: b
POINTS: 1
REFERENCES: 2.6.21
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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DATE MODIFIED: 10/1/2014 2:13 AM

44. Find $(f - g)(x)$.

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$f(x) = -\dfrac{6x}{7x-6}$ $\quad g(x) = -\dfrac{4}{x}$

a. $(f-g)(x) = \dfrac{-6x+34}{7x-6}$

b. $(f-g)(x) = \dfrac{-6x^2+28x+24}{7x^2-6x}$

c. $(f-g)(x) = \dfrac{-3x+2}{3x-3}$

d. $(f-g)(x) = \dfrac{-6x^2+28x-24}{7x^2-6x}$

e. $(f-g)(x) = \dfrac{-6x+22}{7x-6}$

ANSWER: d
POINTS: 1
REFERENCES: 2.6.16
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/27/2014 12:25 AM

45. Evaluate the indicated function for $f(x) = x^2 - 6$ and $g(x) = x + 4$.
$(fg)(1)$

a. 15
b. –35
c. –23
d. –25
e. –33

ANSWER: d
POINTS: 1
REFERENCES: 2.6.23
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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46. Find $g \circ f$.

$f(x) = x - 9 \quad g(x) = x^2$

a. $(g \circ f)(x) = x^2 - 18x + 81$

b. $(g \circ f)(x) = x^2 - 81$

c. $(g \circ f)(x) = x^2 - 9x + 81$

d. $(g \circ f)(x) = x^2 - 9$

e. $(g \circ f)(x) = x^2 + 81$

ANSWER: a
POINTS: 1
REFERENCES: 2.6.44b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/1/2014 2:28 AM

47. Find $f \circ g$.

$f(x) = -2x - 9 \quad g(x) = x + 5$

a. $(f \circ g)(x) = -2x - 19$

b. $(f \circ g)(x) = -3x - 14$

c. $(f \circ g)(x) = -2x^2 - 19x - 45$

d. $(f \circ g)(x) = -3x - 4$

e. $(f \circ g)(x) = -2x - 4$

ANSWER: a
POINTS: 1
REFERENCES: 2.6.43a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/29/2014 4:46 AM

48. Find $f \circ g$.

$f(x) = x + 3 \quad g(x) = \dfrac{1}{x^2 - 9}$

a. $(f \circ g)(x) = \dfrac{1}{x^2}$

b. $(f \circ g)(x) = \dfrac{4}{x^2 - 9}$

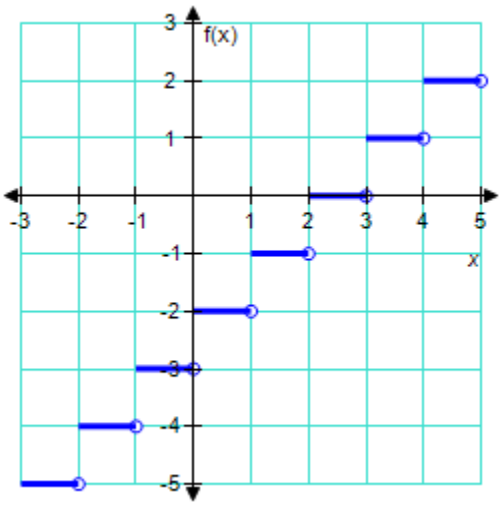
c. $(f \circ g)(x) = \dfrac{3x^2 - 2}{x^2 - 9}$

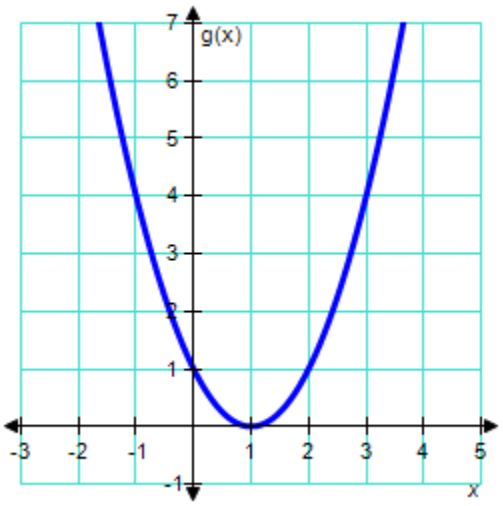
d. $(f \circ g)(x) = \dfrac{1}{x^2 + 6x}$

e. $(f \circ g)(x) = \dfrac{3x^2 - 26}{x^2 - 9}$

ANSWER: e
POINTS: 1
REFERENCES: 2.6.48a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/1/2014 2:39 AM

49. Use the graphs of f and g to evaluate the function.





$(f \circ g)(3)$

a. 1
b. –2
c. 4
d. –1
e. 2

ANSWER: e
POINTS: 1
REFERENCES: 2.6.52a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/27/2014 2:06 AM

50. The monthly cost C of running the machinery in a factory for t hours is given by

Section 1.8 - Combinations of Functions: Composite Functions

$C(t) = 40t + 400$

The number of hours t needed to produce x products is given by $t(x) = 6x$.

Find the equation representing the cost C of manufacturing x products.

a. $C(x) = 46x + 440$

b. $C(x) = 240x + 16{,}000$

c. $C(x) = 40x + 406$

d. $C(x) = 46x + 400$

e. $C(x) = 240x + 400$

ANSWER: e
POINTS: 1
REFERENCES: 2.6.74a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/1/2014 3:21 AM

51. Let $f(x) = 2x + 1$, $g(x) = 3x - 2$. Find the function.

$(f - g)(x)$

a. $(f - g)(x) = \dfrac{2x + 1}{3x - 2}$

b. $(f - g)(x) = 3 - x$

c. $(f - g)(x) = 6x^2 - x - 2$

d. $(f - g)(x) = 5x - 1$

e. none of the above

ANSWER: b
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: False
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/1/2014 3:23 AM

52. Let $f(x) = 2x - 1$, $g(x) = 3x - 2$. Find the domain of the function.

$(f + g)(x)$

a. $(-\infty, \infty)$

b. $[0, \infty)$

c. $(-\infty, 0]$

d. $(-\infty, 0)$

e. $(0, \infty)$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/1/2014 3:29 AM

53. Let $f(x) = \frac{1}{x}, g(x) = x + 5$. Find the composite function which expresses the given correspondence correctly.

$$\frac{1}{x+5}$$

a. $(g \circ g)(x)$

b. $(g \circ f)(x)$

c. $(f \circ f)(x)$

d. $(f \circ g)(x)$

e. none of the above

ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: False
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/1/2014 5:32 AM

54. Find $f \circ g$.

$f(x) = |x^2 + 1| \quad g(x) = 9 - x$

a. $(f \circ g)(x) = |x^2 - 18x + 82|$

b. $(f \circ g)(x) = |x^2 + 82|$

c. $(f \circ g)(x) = |8 - x^2|$

d. $(f \circ g)(x) = |10 - x^2|$

e. $(f \circ g)(x) = 9 - |x^2 + 1|$

ANSWER: a
POINTS: 1

Section 1.8 - Combinations of Functions: Composite Functions

REFERENCES: 55
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/1/2014 5:13 AM

55. Let $f(x) = x^2 - 1$, $g(x) = 3x - 2$. Find the value of the function.

$(f+g)(5)$

ANSWER: 37
POINTS: 1
QUESTION TYPE: Numeric Response
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/1/2014 4:40 AM

56. Let $f(x) = 2x + 1$, $g(x) = 3x - 2$. Find the function.

$(f-g)(x)$

Please give the answer as a simplified expression (not an equation).
ANSWER: $-x+3$
POINTS: 1
QUESTION TYPE: Subjective Short Answer
HAS VARIABLES: False
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/1/2014 4:37 AM

57. Let $f(x) = \sqrt{x+1}$, $g(x) = x^2 - 1$. Find the composite function.

$(f \circ g)(x)$

ANSWER: $|x|$
POINTS: 1
QUESTION TYPE: Subjective Short Answer
HAS VARIABLES: False
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/1/2014 4:36 AM

58. Let $f(x) = 3x$, $g(x) = x + 1$. Find the composite function.

$(f \circ g)(x)$

Please give the answer as an expression (not an equation).
ANSWER: $3x + 3$
POINTS: 1

Section 1.8 - Combinations of Functions: Composite Functions

QUESTION TYPE: Subjective Short Answer
HAS VARIABLES: False
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/1/2014 4:33 AM

Let $f(x) = x^2 + x$, $g(x) = x^2 - 1$. Match the equivalent expressions.

Choose the correct letter for each question.
a. $f / g(x), x \neq \pm 1$

b. $(f \cdot g)(x)$

QUESTION TYPE: Matching
HAS VARIABLES: False
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/1/2014 4:28 AM

59. $x^4 + x^3 - x^2 - x$

ANSWER: b
POINTS: 1

60. $\dfrac{x^2 + x}{x^2 - 1}$

ANSWER: a
POINTS: 1

Section 1.9 - Inverse Functions

1. Find the inverse function of f informally.

$f(x) = 6x$

a. $f^{-1}(x) = 6 - x$

b. $f^{-1}(x) = 6 + x$

c. $f^{-1}(x) = \frac{1}{6}x$

d. $f^{-1}(x) = x - 6$

e. $f(x) = 6x$

ANSWER: c
POINTS: 1
REFERENCES: 2.7.7
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/27/2014 3:29 AM

2. Find the inverse function of f informally.

$f(x) = x - 5$

a. $f^{-1}(x) = -(x + 5)$

b. $f^{-1}(x) = \frac{5}{x}$

c. $f^{-1}(x) = \frac{x}{5}$

d. $f^{-1}(x) = 5 - x$

e. $f^{-1}(x) = x + 5$

ANSWER: e
POINTS: 1
REFERENCES: 2.7.10
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/27/2014 3:48 AM

3. Find the inverse function of f informally.

$f(x) = x^4$

a. $f^{-1}(x) = 4\sqrt{x}$

b. $f^{-1}(x) = \sqrt[4]{x}$

c. $f^{-1}(x) = \dfrac{1}{\sqrt[4]{x}}$

d. $f^{-1}(x) = \left(\sqrt[4]{x}\right)^4$

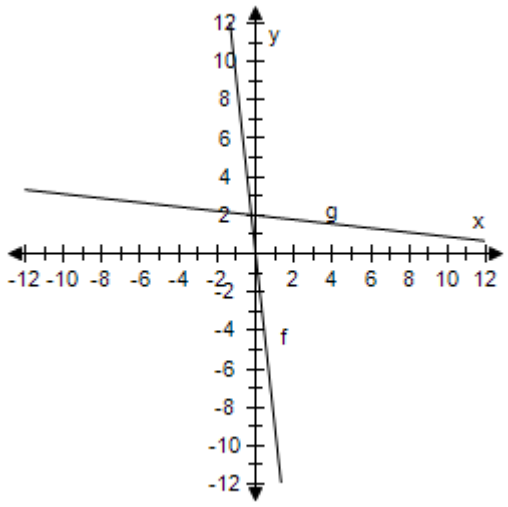
e. $f^{-1}(x) = -\sqrt[4]{x}$

ANSWER: b
POINTS: 1
REFERENCES: 2.7.14
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/27/2014 4:02 AM

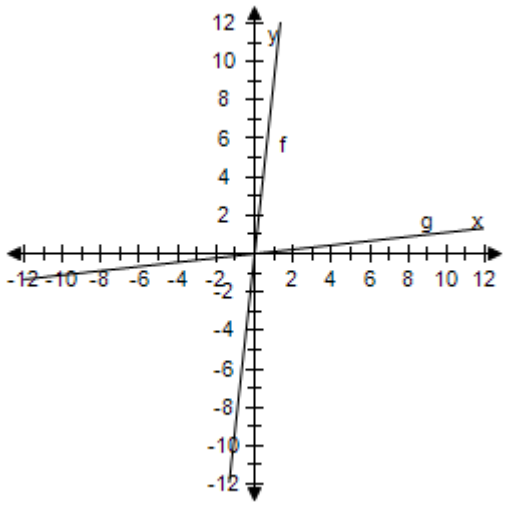
4. Select the correct graph, showing *f* and *g* are inverse functions.

$f(x) = 9x,\ g(x) = \dfrac{x}{9}$

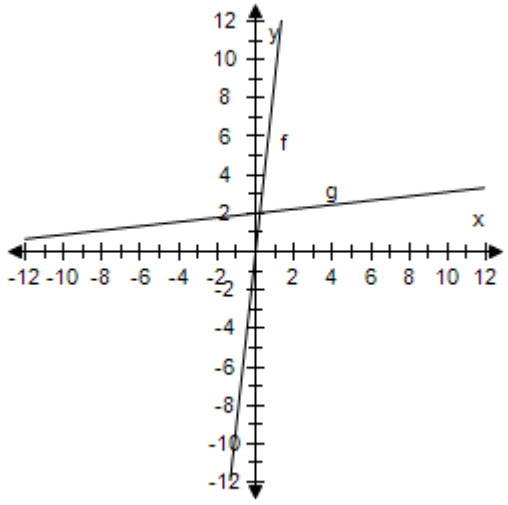
a.



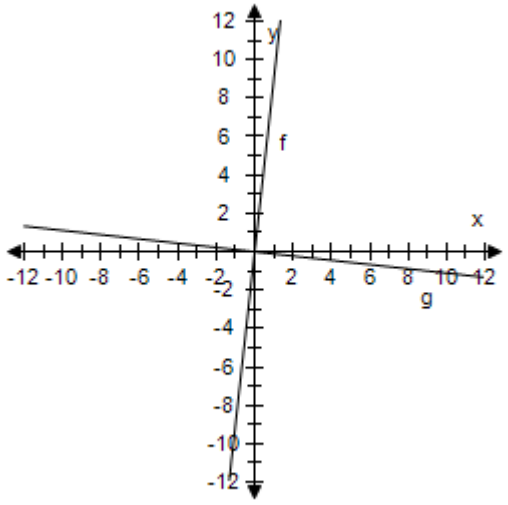
b.



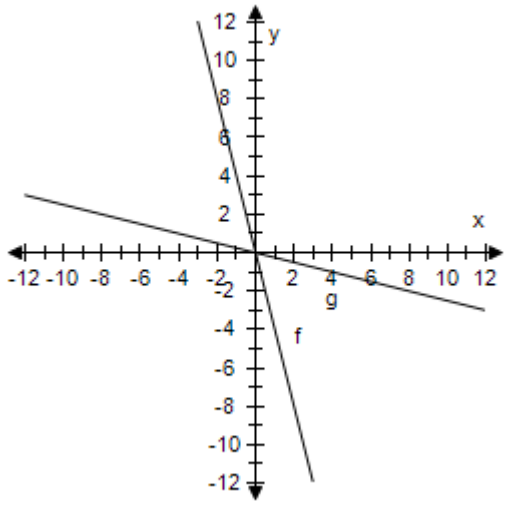
c.



d.



e.



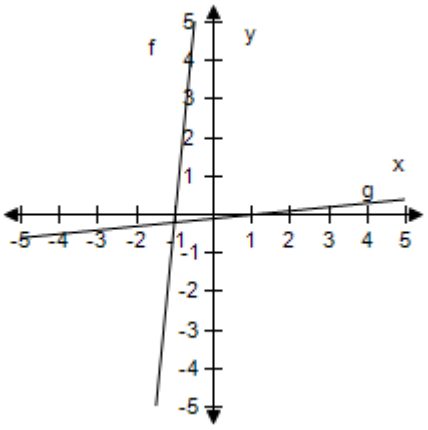
ANSWER: b
POINTS: 1
REFERENCES: 2.7.23b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/30/2014 8:49 AM

5. Select the correct graph, showing f and g are inverse functions.

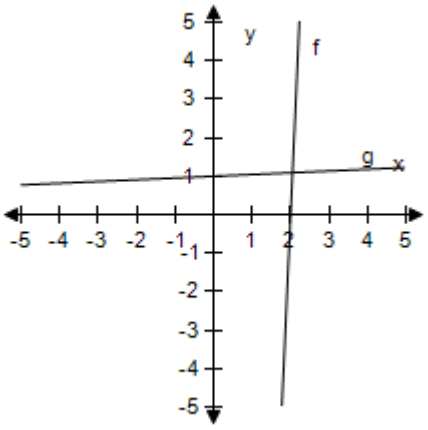
$$f(x) = 6x + 1, g(x) = \frac{x - 1}{6}$$

Section 1.9 - Inverse Functions

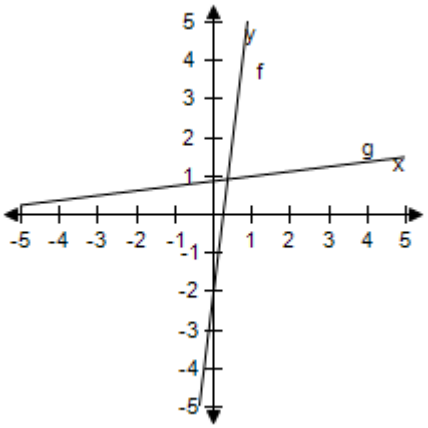
a.



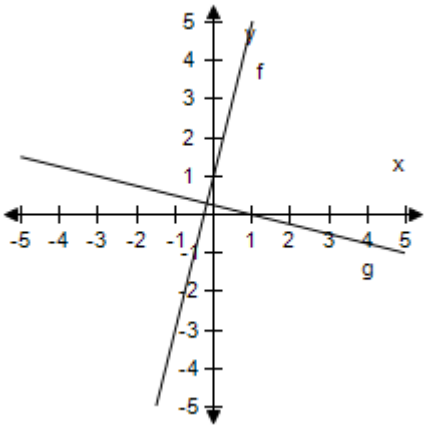
b.



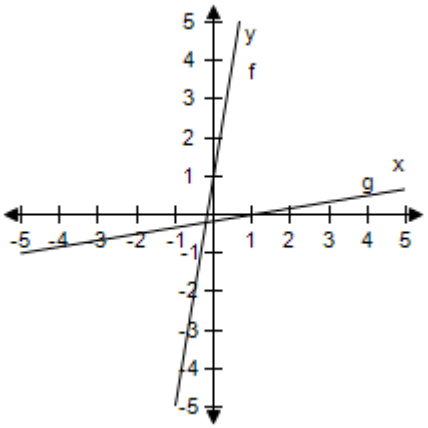
c.



d.



e.



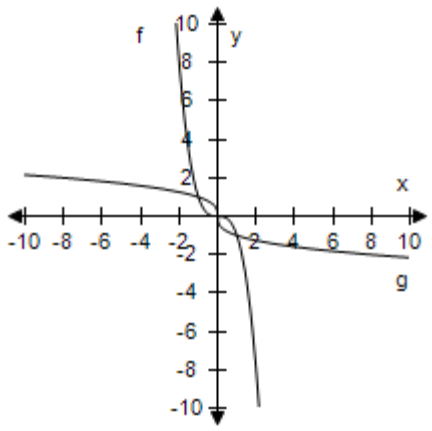
ANSWER: e
POINTS: 1
REFERENCES: 2.7.25b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/30/2014 9:58 AM

Section 1.9 - Inverse Functions

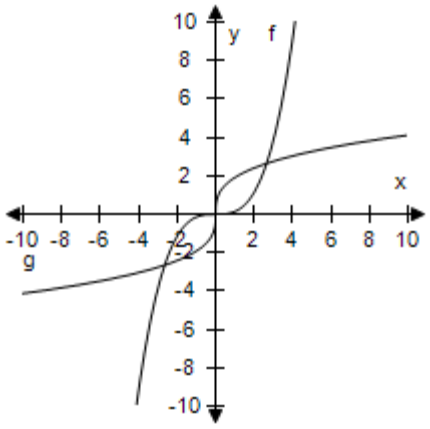
6. Select the correct graph, showing f and g are inverse functions.

$$f(x) = \frac{x^3}{7}, g(x) = \sqrt[3]{7x}$$

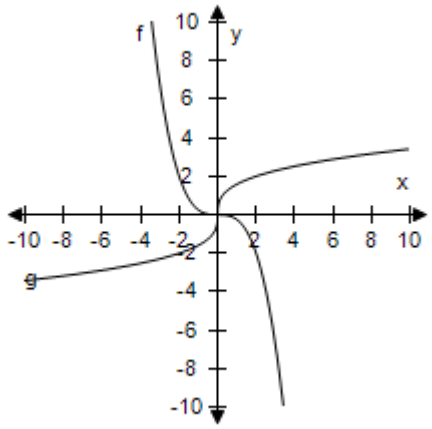
a.



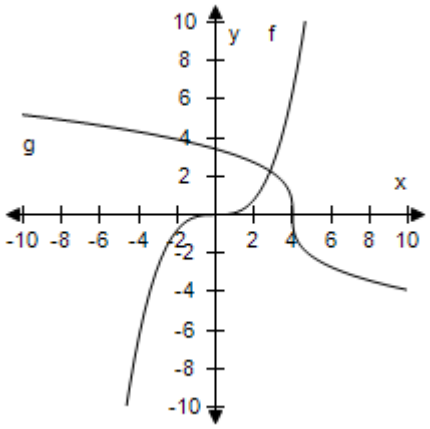
b.



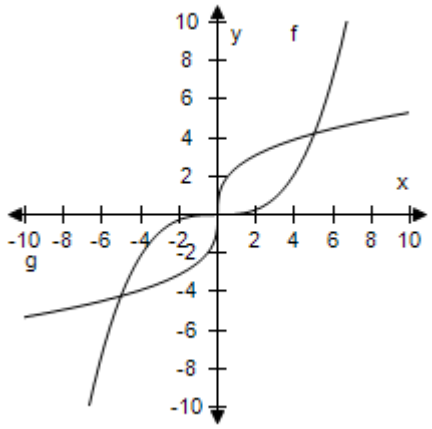
c.



d.



e.



ANSWER: b
POINTS: 1
REFERENCES: 2.7.27b

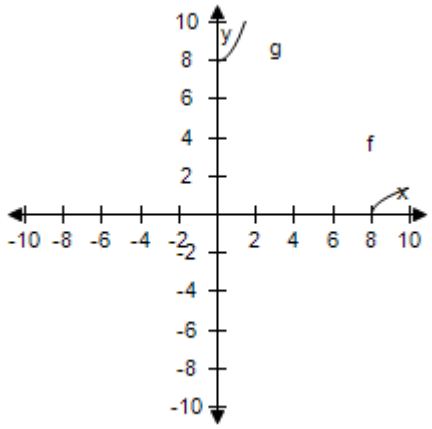
Section 1.9 - Inverse Functions

QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/30/2014 10:05 AM

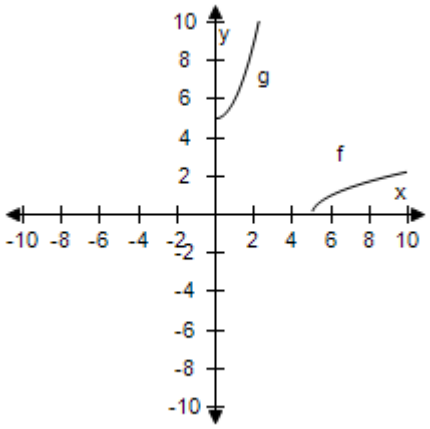
7. Select the correct graph, showing f and g are inverse functions.

$f(x) = \sqrt{x - 3}, g(x) = x^2 + 3, x \geq 0$

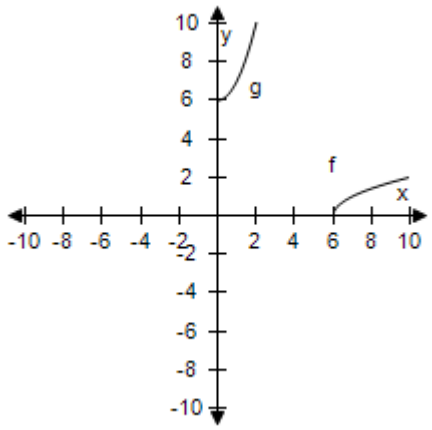
a.



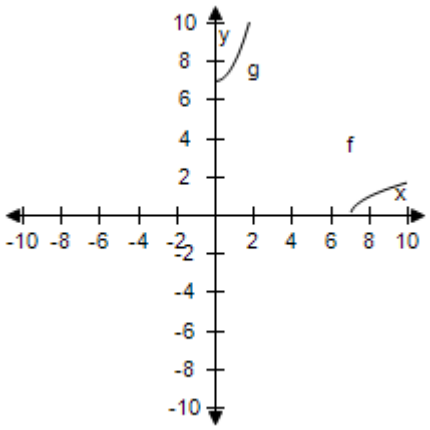
b.



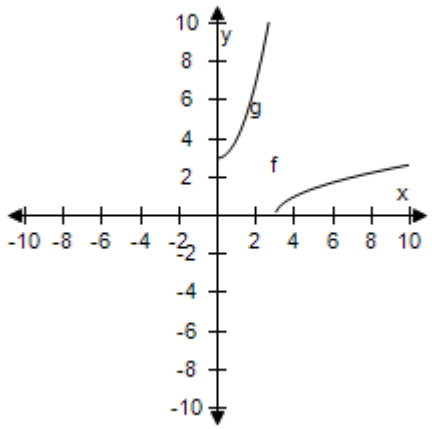
c.



d.



e.



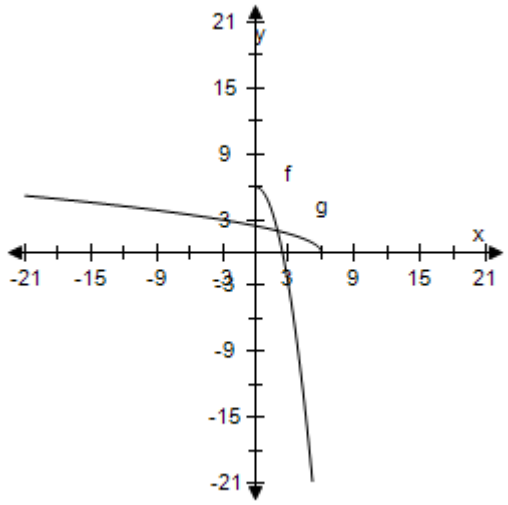
Section 1.9 - Inverse Functions

ANSWER: e
POINTS: 1
REFERENCES: 2.7.29b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/30/2014 10:24 AM

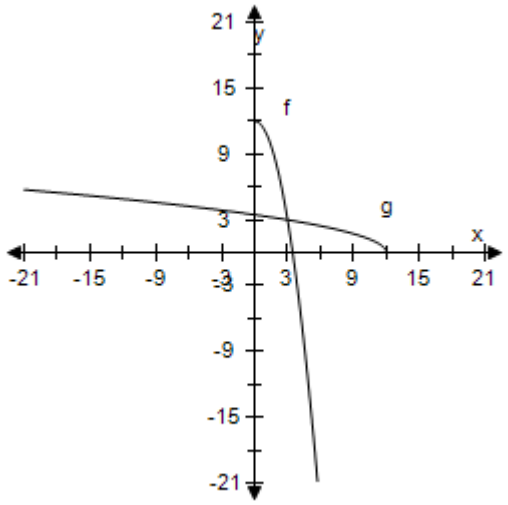
8. Select the correct graph, showing f and g are inverse functions.

$f(x) = 6 - x^2, g(x) = \sqrt{6 - x}, x \leq 6$

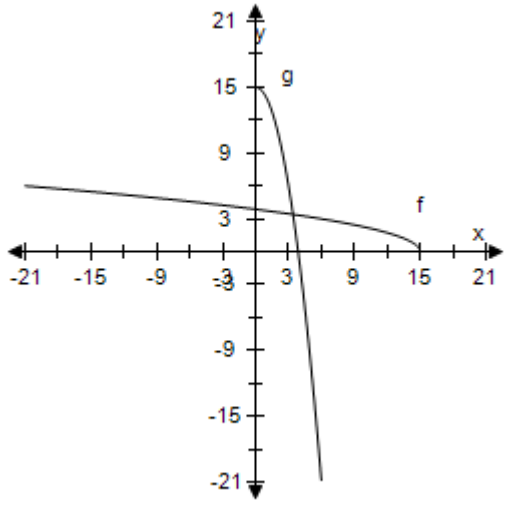
a.



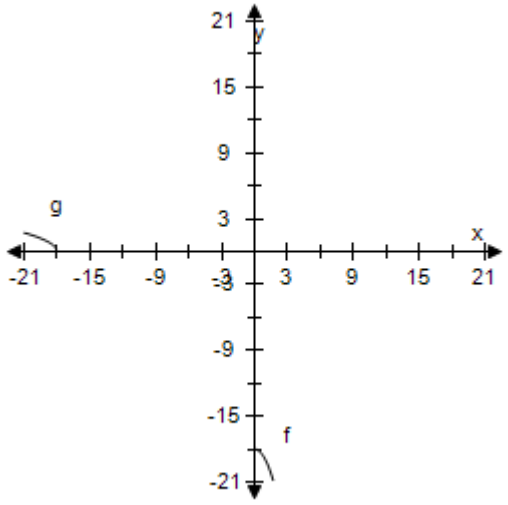
b.



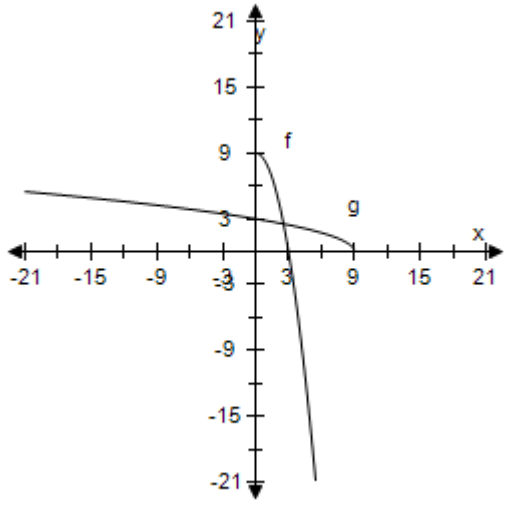
c.



d.



e.

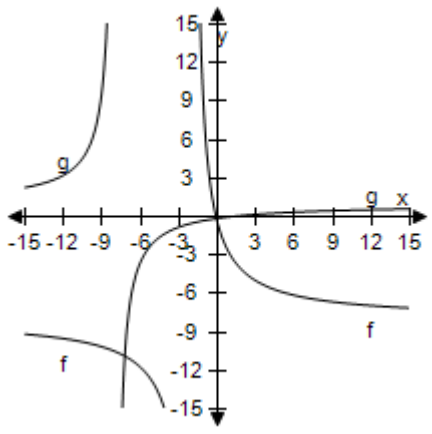


ANSWER: a
POINTS: 1
REFERENCES: 2.7.31b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/30/2014 10:41 AM

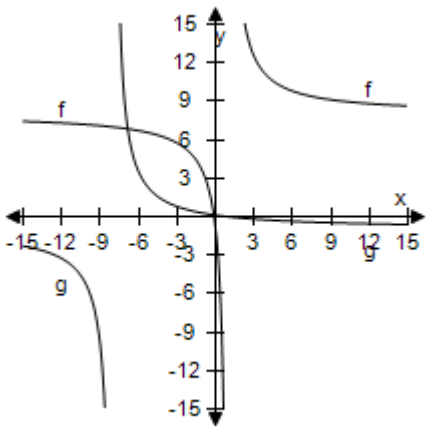
9. Select the correct graph, showing f and g are inverse functions.

$$f(x) = \frac{x - 1}{x + 8}, g(x) = -\frac{8x + 1}{x - 1}$$

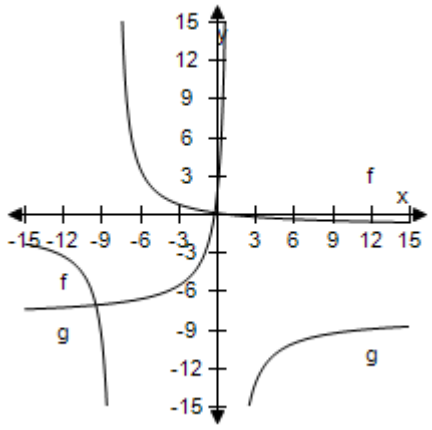
a.



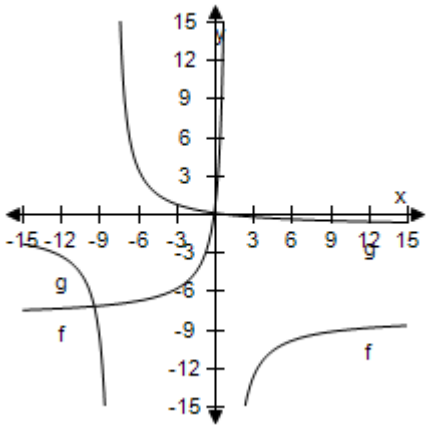
b.



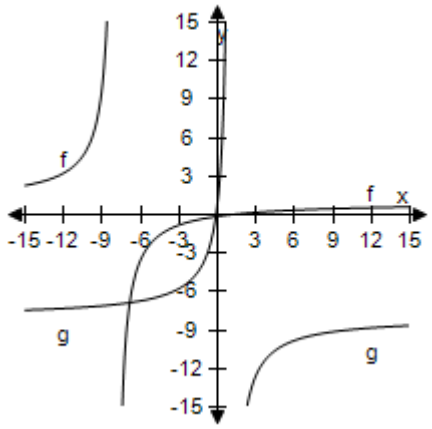
c.



d.



e.



ANSWER: e
POINTS: 1
REFERENCES: 2.7.33b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/30/2014 11:07 AM

10. Use the tables of values for $y = f(x)$ to complete a table for $y = f^{-1}(x)$.

x	–3	–2	0	1	2	3
$f(x)$	–4	–2	2	4	6	8

a.

x	–4	–2	2	4	6	8
$f^{-1}(x)$	–3	–2	0	1	8	3

b.

x	–4	–2	2	4	6	6
$f^{-1}(x)$	–2	–2	0	1	2	3

c.

x	–4	–2	2	4	6	8

$f^{-1}(x)$	–3	0	1	1	8	3

d.

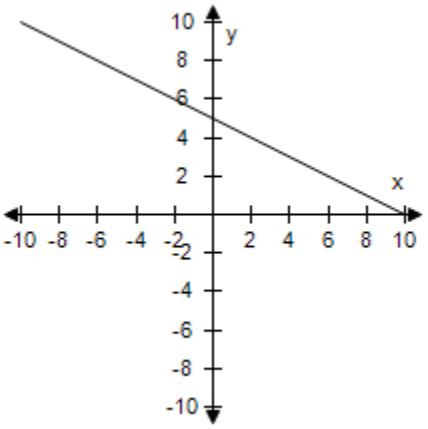
x	–4	–2	2	4	6	8
$f^{-1}(x)$	–3	–2	0	6	2	3

e.

x	–4	–2	2	4	6	8
$f^{-1}(x)$	–3	–2	0	1	2	3

ANSWER: e
POINTS: 1
REFERENCES: 2.2.37
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/18/2015 4:00 AM

11. Does the function have an inverse function?

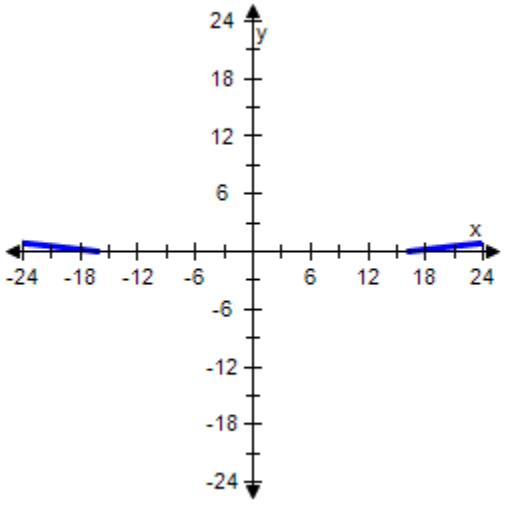


a. No
b. Yes

ANSWER: b
POINTS: 1
REFERENCES: 2.2.39
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/22/2014 7:00 AM

12. Does the function have an inverse function?

Section 1.9 - Inverse Functions



a. No

b. Yes

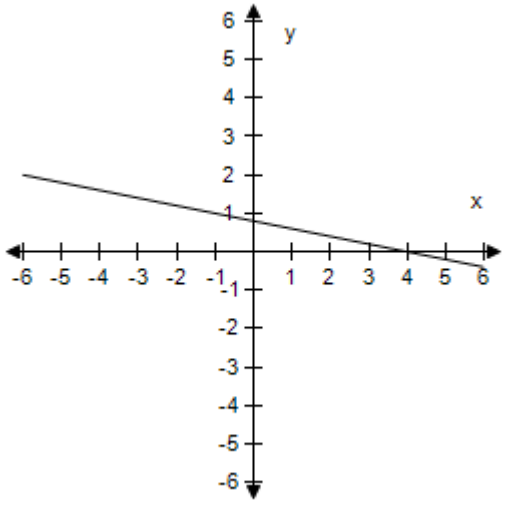
ANSWER: a
POINTS: 1
REFERENCES: 2.2.41
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/22/2014 7:01 AM

13. Select the graph of the function, and use the Horizontal Line Test to determine whether the function is one-to-one and so has an inverse function.

$$g(x) = \frac{4 - x}{5}$$

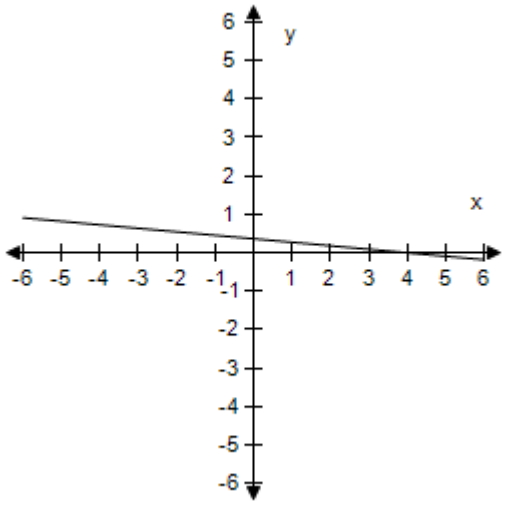
Section 1.9 - Inverse Functions

a.



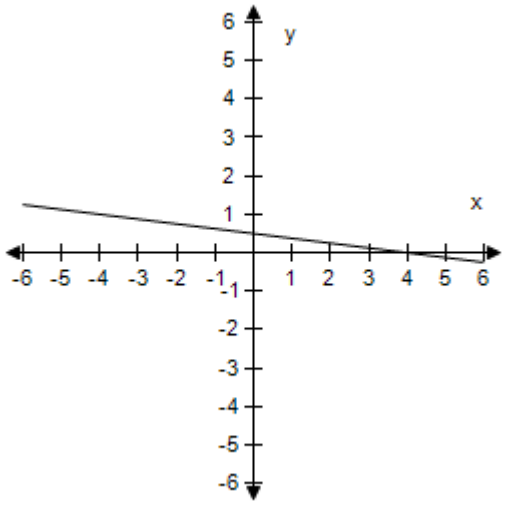
The function has an inverse.

b.



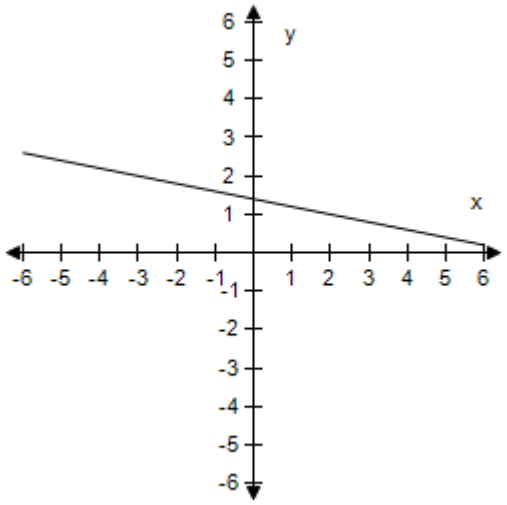
The function has an inverse.

c.



The function has an inverse.

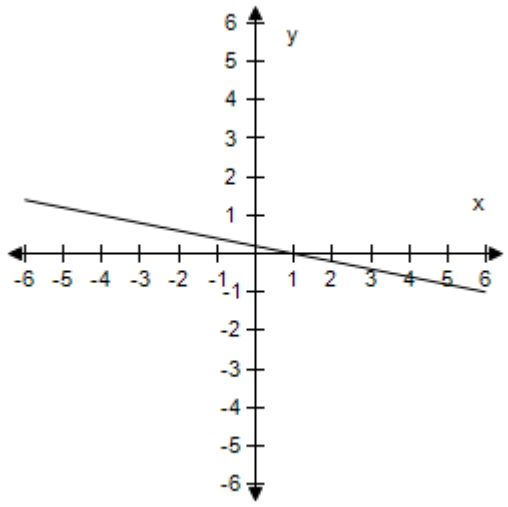
d.



The function has an inverse.

e.

Section 1.9 - Inverse Functions



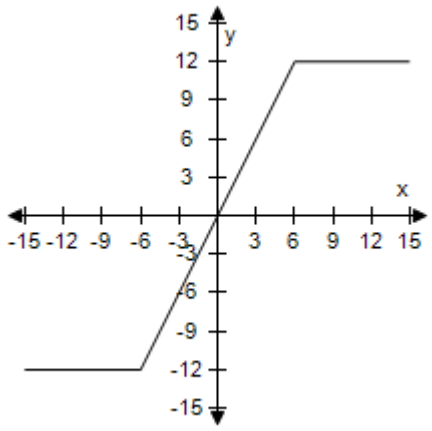
The function has an inverse.

ANSWER: a
POINTS: 1
REFERENCES: 2.2.43
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/22/2014 7:03 AM

14. Select the graph of the function, and use the Horizontal Line Test to determine whether the function is one-to-one and so has an inverse function.

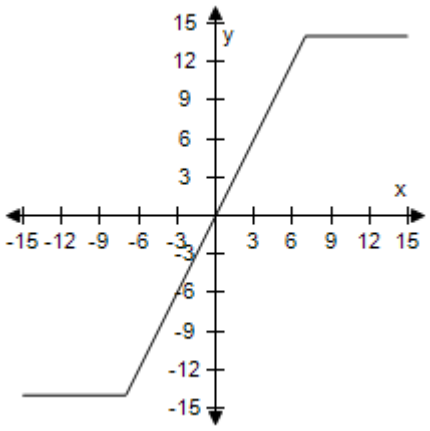
$g(x) = |x + 5| - |x - 5|$

a.



The function does not have inverse.

b.

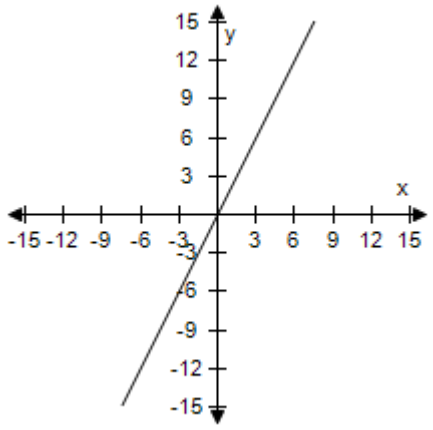


The function does not have inverse.

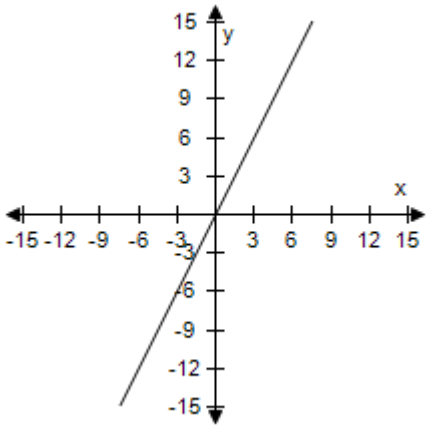
c.

d.

Section 1.9 - Inverse Functions

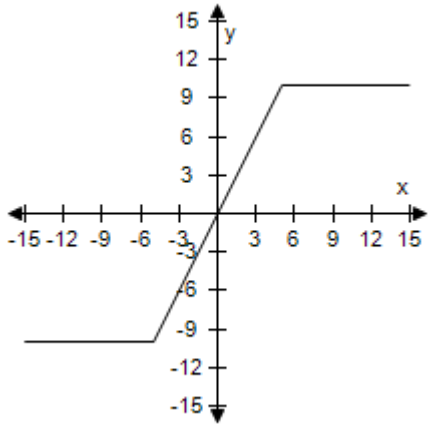


The function does not have inverse.



The function does not have inverse.

e.



The function does not have inverse.

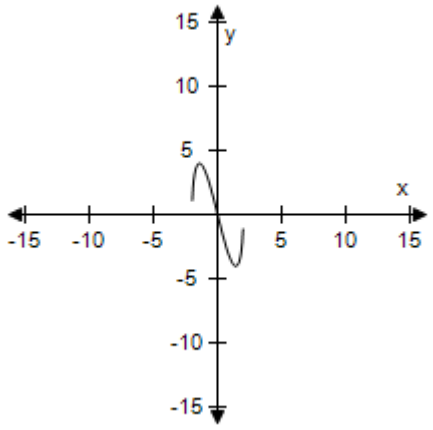
ANSWER: e
POINTS: 1
REFERENCES: 2.2.45
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 9/30/2014 8:24 AM

15. Select the graph of the function, and use the Horizontal Line Test to determine whether the function is one-to-one and so has an inverse function.

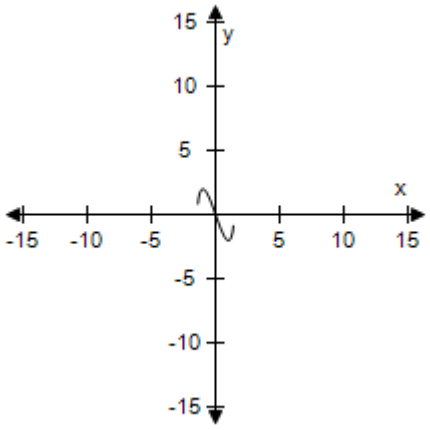
$$g(x) = -2x\sqrt{6 - x^2}$$

a.

b.

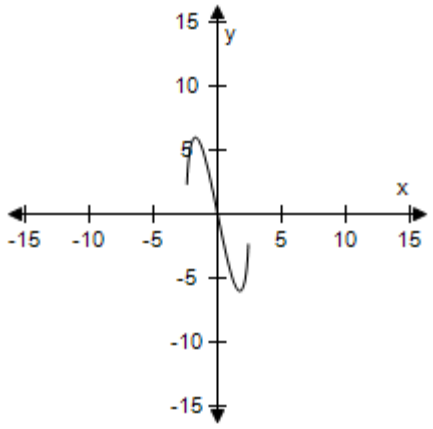


The function does not have inverse.



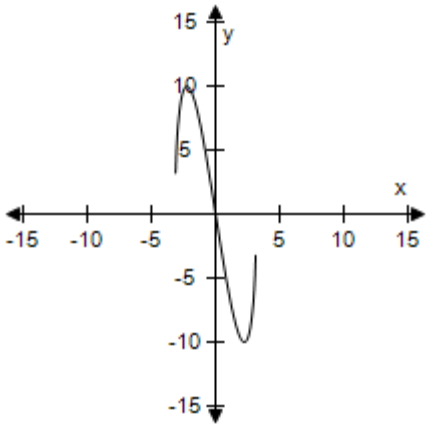
The function does not have inverse.

c.



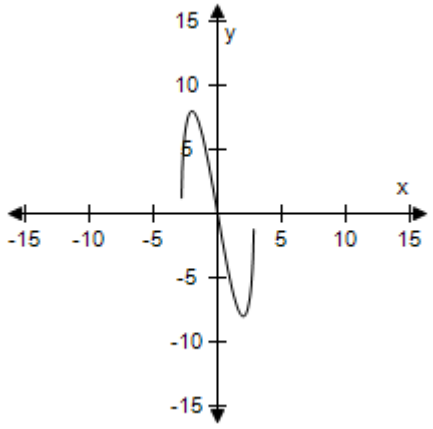
The function does not have inverse.

d.



The function does not have inverse.

e.



The function does not have inverse.

ANSWER: c
POINTS: 1
REFERENCES: 2.2.47

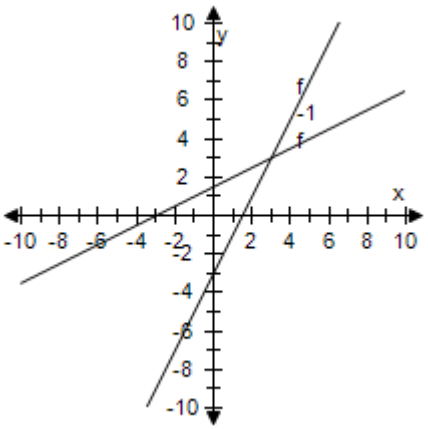
Section 1.9 - Inverse Functions

QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/22/2014 7:05 AM

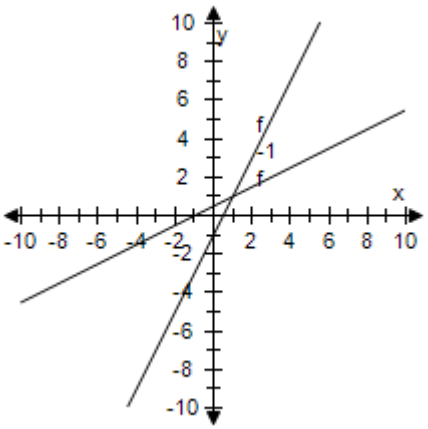
16. Select the graph of f and f^{-1} on the same set of coordinate axes.

$f(x) = 2x - 3$

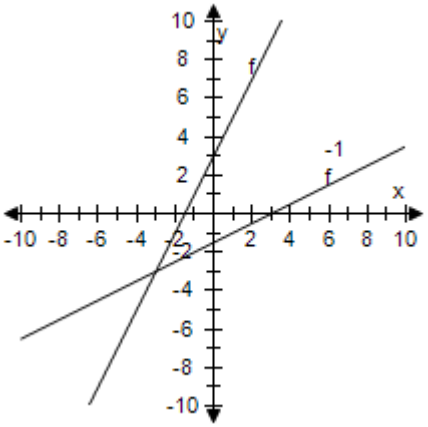
a.



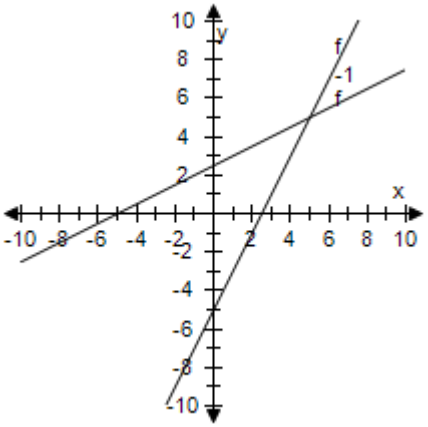
b.



c.

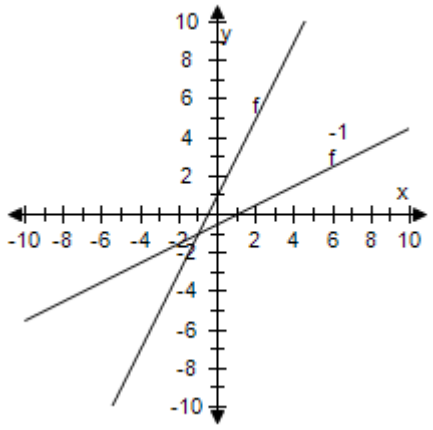


d.



e.

Section 1.9 - Inverse Functions



ANSWER: a
POINTS: 1
REFERENCES: 2.2.49b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/1/2014 6:21 AM

17. Find the inverse function of $g(x) = x^2 - 3$ informally.

a. $g^{-1}(x) = \sqrt[2]{x - 3}$

b. $g^{-1}(x) = (x + 3)^2$

c. $g^{-1}(x) = x^2 + 3$

d. $g^{-1}(x) = \sqrt[2]{x + 3}$

e. $g^{-1}(x) = (x - 3)^2$

ANSWER: d
POINTS: 1
REFERENCES: 2.2..51a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/22/2014 7:09 AM

18. Find the inverse function of $f(x) = \sqrt{36 - x^2}, 0 \le x \le 6$.

a. $f^{-1}(x) = \sqrt{36 - x^2}, 0 \le x \le 6$

b. $f^{-1}(x) = \sqrt{x^2 - 36}, 0 \le x \le 6$

c. $f^{-1}(x) = 36 - x^2, 0 \le x \le 6$

d. $f^{-1}(x) = \sqrt{36 + x^2}, 0 \le x \le 6$

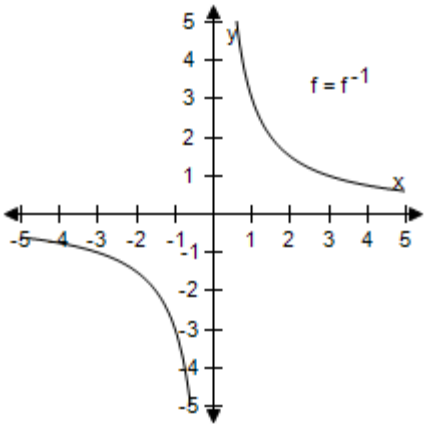
e. $f^{-1}(x) = 36 + x^2, 0 \le x \le 6$

ANSWER: a
POINTS: 1
REFERENCES: 2.2..53a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/1/2014 6:35 AM

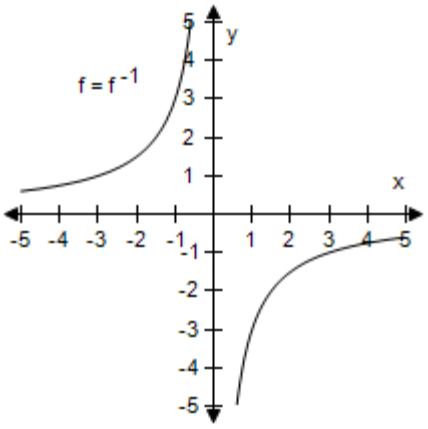
19. Select the graph of f and f^{-1} on the same set of coordinate axes.

$$f(x) = \frac{3}{x}$$

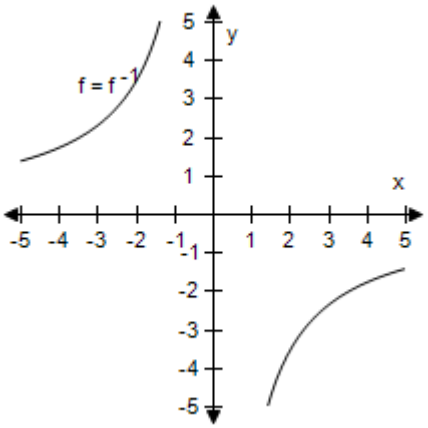
a.



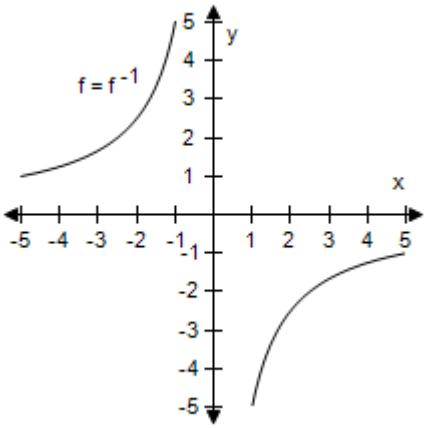
b.



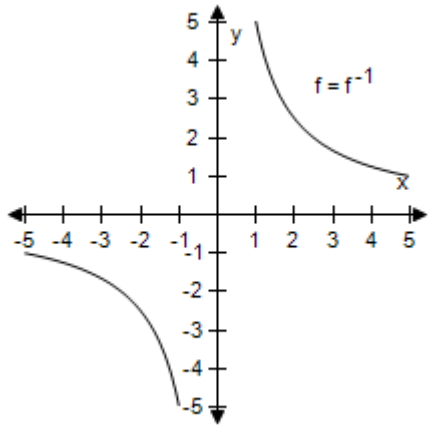
c.



d.



e.



ANSWER: a
POINTS: 1
REFERENCES: 2.2.55b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/1/2014 6:55 AM

20. Determine whether the function has an inverse function. If it does, find the inverse function.

$g(x) = x^7$

a. $g^{-1}(x) = \frac{7}{x}$

b. $g^{-1}(x) = -7x$

c. $g^{-1}(x) = -\frac{x}{7}$

d. $g^{-1}(x) = 7x$

e. The inverse exists, but none of the above

ANSWER: e
POINTS: 1
REFERENCES: 2.7.63
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/1/2014 7:25 AM

21. Determine whether the function has an inverse function. If it does, find the inverse function.

$g(x) = \frac{x}{5}$

a. $g^{-1}(x) = -5x$

b. $g^{-1}(x) = 5x$

c. $g^{-1}(x) = \frac{5}{x}$

d. $g^{-1}(x) = -\frac{x}{5}$

e. No inverse

ANSWER: b
POINTS: 1
REFERENCES: 2.7.65
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/1/2014 7:29 AM

22. Determine whether the function has an inverse function. If it does, find the inverse function.

$f(x) = -2$

a. $f^{-1}(x) = 2$

b. $f^{-1}(x) = -\frac{1}{2}$

c. $f^{-1}(x) = \frac{1}{2}$

d. $f^{-1}(x) = -2$

e. No inverse

ANSWER: e
POINTS: 1
REFERENCES: 2.7.67
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/1/2014 7:32 AM

23. Determine whether the function has an inverse function. If it does, find the inverse function.

$f(x) = (x + 4)^2, x \geq -4$

a. $f^{-1}(x) = \sqrt{x} + 4$

b. $f^{-1}(x) = -(x + 4)^2$

c. $f^{-1}(x) = (x + 4)^{-2}$

d. $f^{-1}(x) = \sqrt{x} - 4$

e. No inverse

Section 1.9 - Inverse Functions

ANSWER: d
POINTS: 1
REFERENCES: 2.7.69
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/1/2014 8:05 AM

24. Determine whether the function has an inverse function. If it does, find the inverse function.

$$f(x) = \begin{cases} x + 2, x < 0 \\ 2 - x, x \geq 0 \end{cases}$$

a. $f^{-1}(x) = \begin{cases} 2 + x, x \geq 0 \\ x - 2, x < 0 \end{cases}$

b. $f^{-1}(x) = \begin{cases} 2 + x, x \geq 0 \\ x - 2, x < 0 \end{cases}$

c. $f^{-1}(x) = \begin{cases} x - 2, x \geq 0 \\ 2 + x, x < 0 \end{cases}$

d. $f^{-1}(x) = \begin{cases} x + 2, x \geq 0 \\ 2 - x, x < 0 \end{cases}$

e. No inverse

ANSWER: e
POINTS: 1
REFERENCES: 2.7.71
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/1/2014 8:12 AM

25. Determine whether the function has an inverse function. If it does, find the inverse function.

$$h(x) = -\frac{4}{x^2}$$

a. $h^{-1}(x) = \frac{4}{x^2}$

b. $h^{-1}(x) = -\frac{x^2}{4}$

c. $h^{-1}(x) = -\frac{4}{x^2}$

d. $h^{-1}(x) = \frac{x^2}{4}$

e. No inverse

ANSWER: e
POINTS: 1
REFERENCES: 2.7.73
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/1/2014 8:19 AM

26. Determine whether the function has an inverse function. If it does, find the inverse function.

$f(x) = \sqrt{7x + 8}$

a. $f^{-1}(x) = -\dfrac{x^2 + 8}{7}$

b. $f^{-1}(x) = -\dfrac{x^2 - 8}{7}$

c. $f^{-1}(x) = \dfrac{x^2 - 8}{7}$

d. $f^{-1}(x) = \dfrac{x^2 + 8}{7}$

e. No Inverse

ANSWER: c
POINTS: 1
REFERENCES: 2.7.75
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/22/2014 7:25 AM

27. Restrict the domain of the function f so that the function is one-to-one and has an inverse function. Then find the inverse function f^{-1}. State the domains and ranges of f and f^{-1}.

$f(x) = (x - 5)^2$

a. $f^{-1}(x) = \sqrt{x} - 5$

The domain of f and the range of f^{-1} are all real numbers x such that $x \geq 5$.
The domain of f^{-1} and the range of f are all real numbers x such that $x \geq 0$.

b. $f^{-1}(x) = \sqrt{x} + 5$

The domain of f and the range of f^{-1} are all real numbers x such that $x \geq 0$.

The domain of f^{-1} and the range of f are all real numbers x such that $x \geq -5$.

c. $f^{-1}(x) = \sqrt{x} + 5$

The domain of f and the range of f^{-1} are all real numbers x such that $x \geq 5$.
The domain of f^{-1} and the range of f are all real numbers x such that $x \geq 0$.

d. $f^{-1}(x) = \sqrt{x} + 5$

The domain of f and the range of f^{-1} are all real numbers x such that $x \geq 0$.
The domain of f^{-1} and the range of f are all real numbers x such that $x \geq 5$.

e. $f^{-1}(x) = \sqrt{x} - 5$

The domain of f and the range of f^{-1} are all real numbers x such that $x \geq -5$.
The domain of f^{-1} and the range of f are all real numbers x such that $x \geq 0$.

ANSWER: c
POINTS: 1
REFERENCES: 2.7.77
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/22/2014 7:29 AM

28. Restrict the domain of the function f so that the function is one-to-one and has an inverse function. Then find the inverse function f^{-1}. State the domains and ranges of f and f^{-1}.

$f(x) = |x + 5|$

a. $f^{-1}(x) = x - 5$

The domain of f and the range of f^{-1} are all real numbers x such that $x \geq -5$.
The domain of f^{-1} and the range of f are all real numbers x such that $x \geq 0$.

b. $f^{-1}(x) = x + 5$

The domain of f and the range of f^{-1} are all real numbers x such that $x \geq 0$.
The domain of f^{-1} and the range of f are all real numbers x such that $x \geq -5$.

c. $f^{-1}(x) = x - 5$

The domain of f and the range of f^{-1} are all real numbers x such that $x \geq 0$.
The domain of f^{-1} and the range of f are all real numbers x such that $x \geq 5$.

d. $f^{-1}(x) = x + 5$

The domain of f and the range of f^{-1} are all real numbers x such that $x \geq 5$.
The domain of f^{-1} and the range of f are all real numbers x such that $x \geq 0$.

e. $f^{-1}(x) = x - 5$

The domain of f and the range of f^{-1} are all real numbers x such that $x \geq 5$.
The domain of f^{-1} and the range of f are all real numbers x such that $x \geq 0$.

ANSWER: a
POINTS: 1
REFERENCES: 2.7.79
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/22/2014 7:32 AM

29. Restrict the domain of the function f so that the function is one-to-one and has an inverse function. Then find the inverse function f^{-1}. State the domains and ranges of f and f^{-1}.

$f(x) = -6x^2 + 2$

a. $f^{-1}(x) = \dfrac{\sqrt{-6(x - 2)}}{6}$

The domain of f and the range of f^{-1} are all real numbers x such that $x \geq 0$.
The domain of f^{-1} and the range of f are all real numbers x such that $x \leq 2$.

b. $f^{-1}(x) = \dfrac{\sqrt{-2(x - 6)}}{2}$

The domain of f and the range of f^{-1} are all real numbers x such that $x \geq 0$.
The domain of f^{-1} and the range of f are all real numbers x such that $x \leq 2$.

c. $f^{-1}(x) = \dfrac{\sqrt{-6(x - 2)}}{-6}$

The domain of f and the range of f^{-1} are all real numbers x such that $x \geq 0$.
The domain of f^{-1} and the range of f are all real numbers x such that $x \leq 2$.

d. $f^{-1}(x) = \dfrac{\sqrt{-6(x - 2)}}{6}$

The domain of f and the range of f^{-1} are all real numbers x such that $x \geq 0$.
The domain of f^{-1} and the range of f are all real numbers x such that $x \leq -2$.

e. $f^{-1}(x) = \dfrac{\sqrt{-6(x + 2)}}{6}$

The domain of f and the range of f^{-1} are all real numbers x such that $x \geq 0$.
The domain of f^{-1} and the range of f are all real numbers x such that $x \leq 2$.

Section 1.9 - Inverse Functions

ANSWER: a
POINTS: 1
REFERENCES: 2.7.83
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/22/2014 7:42 AM

30. Restrict the domain of the function f so that the function is one-to-one and has an inverse function. Then find the inverse function f^{-1}. State the domains and ranges of f and f^{-1}.

$f(x) = |x - 9| + 1$

a. $f^{-1}(x) = x + 8$
The domain of f and the range of f^{-1} are all real numbers x such that $x \geq 9$.
The domain of f^{-1} and the range of f are all real numbers x such that $x \geq 1$.

b. $f^{-1}(x) = x - 8$
The domain of f and the range of f^{-1} are all real numbers x such that $x \geq 9$.
The domain of f^{-1} and the range of f are all real numbers x such that $x \geq 1$.

c. $f^{-1}(x) = -x - 8$
The domain of f and the range of f^{-1} are all real numbers x such that $x \geq 1$.
The domain of f^{-1} and the range of f are all real numbers x such that $x \geq -9$.

d. $f^{-1}(x) = x + 8$
The domain of f and the range of f^{-1} are all real numbers x such that $x \geq -9$.
The domain of f^{-1} and the range of f are all real numbers x such that $x \geq 1$.

e. $f^{-1}(x) = -x + 8$
The domain of f and the range of f^{-1} are all real numbers x such that $x \geq 1$.
The domain of f^{-1} and the range of f are all real numbers x such that $x \geq 9$.

ANSWER: a
POINTS: 1
REFERENCES: 2.7.85
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/22/2014 7:51 AM

31. Use the functions given by $f(x) = \frac{1}{8}x - 1$ and $g(x) = x^3$ to find $(f^{-1} \circ g^{-1})(1)$.

a. 14
b. 12
c. 16

d. 20
e. 18

ANSWER: c
POINTS: 1
REFERENCES: 2.7.87
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/22/2014 8:00 AM

32. Use the functions given by $f(x) = \frac{1}{8}x - 5$ and $g(x) = x^3$ to find $(g^{-1} \circ f^{-1})(-5)$.

a. –2
b. 0
c. –4
d. 2
e. 4

ANSWER: b
POINTS: 1
REFERENCES: 2.7.88
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/22/2014 8:12 AM

33. Use the functions given by $f(x) = \frac{1}{8}x - 5$ and $g(x) = x^3$ to find $(f^{-1} \circ f^{-1})(-5)$.

a. 36
b. 44
c. 40
d. 38
e. 42

ANSWER: c
POINTS: 1
REFERENCES: 2.7.89
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/22/2014 8:19 AM

Section 1.9 - Inverse Functions

34. Use the functions given by $f(x) = \frac{1}{125}x - 1$ and $g(x) = x^3$ to find $(f \circ g)^{-1}$.

a. $5\sqrt[3]{x - 1}$

b. $125\sqrt[3]{x - 1}$

c. $5\sqrt[3]{x + 1}$

d. $125\sqrt[3]{x + 1}$

e. $5\sqrt{x + 1}$

ANSWER: c
POINTS: 1
REFERENCES: 2.7.91
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/22/2014 8:21 AM

35. Use the functions given by $f(x) = \frac{1}{64}x - 4$ and $g(x) = x^3$ to find $g^{-1} \circ f^{-1}$.

a. $4\sqrt[3]{(4 - x)}$

b. $-4\sqrt[3]{(x + 4)}$

c. $-4\sqrt[3]{(x - 4)}$

d. $4\sqrt[3]{(x - 4)}$

e. $4\sqrt[3]{(x + 4)}$

ANSWER: e
POINTS: 1
REFERENCES: 2.7.92
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/22/2014 8:30 AM

36. Use the functions given by $f(x) = x + 6$ and $g(x) = 7x - 3$ to find $g^{-1} \circ f^{-1}$.

a. $\frac{-x - 3}{7}$

b. $\frac{x + 3}{7}$

c. $\frac{x-3}{7}$

d. $\frac{x-3}{-7}$

e. $\frac{x-7}{3}$

ANSWER: c
POINTS: 1
REFERENCES: 2.7.93
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/22/2014 8:33 AM

37. Use the functions given by $f(x) = x + 2$ and $g(x) = 2x - 5$ to find $(f \circ g)^{-1}$.

a. $\frac{x+3}{2}$

b. $\frac{x-3}{-2}$

c. $\frac{x-4}{3}$

d. $\frac{x-3}{2}$

e. $\frac{-x-3}{2}$

ANSWER: a
POINTS: 1
REFERENCES: 2.7.95
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/18/2015 4:05 AM

38. Your wage is \$11.00 per hour plus \$0.50 for each unit produced per hour. So, your hourly wage in terms of the number of units produced x is $y = 11 + 0.50x$. Find the inverse function. What does each variable represent in the inverse function?

a. $y = \frac{x-11}{0.50}$
x = hourly wage; y = numbers of units produced

b. $y = 11 + 0.50x$
x = hourly wage; y = numbers of units produced

c. $y = \dfrac{x + 11}{0.50}$

x = hourly wage; y = numbers of units produced

d. $y = \dfrac{11 - x}{0.50}$

x = hourly wage; y = numbers of units produced

e. $y = 11 - 0.50x$
x = hourly wage; y = numbers of units produced

ANSWER: a
POINTS: 1
REFERENCES: 2.7.101a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/22/2014 8:37 AM

39. The function given by $y = 0.03x^2 + 245.50$, $0 < x < 100$ approximates the exhaust temperature y in degrees Fahrenheit, x where is the percent load for a diesel engine. Find the inverse function.

a. $y = \dfrac{x + 245.50}{-0.03}$

b. $y = \sqrt{\dfrac{x - 245.50}{0.03}}$

c. $y = \dfrac{x - 245.50}{0.03}$

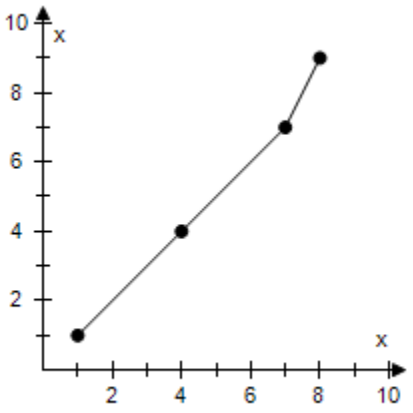
d. $y = \sqrt{\dfrac{x + 245.50}{0.03}}$

e. $y = \dfrac{x + 245.50}{0.03}$

ANSWER: b
POINTS: 1
REFERENCES: 2.7.102a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: False
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/22/2014 8:40 AM

40. Use the graph of the function f to create a table of values for the given points. Then create a second table that can be used to find f^{-1}.

Section 1.9 - Inverse Functions



a.

x	1	4	7	8
y	1	4	7	9

x	1	4	7	9
$f^{-1}(x)$	1	4	7	8

b.

x	1	4	7	9
y	1	4	7	8

x	1	4	7	8
$f^{-1}(x)$	1	4	7	9

c.

x	1	4	7	8
y	1	4	7	9

x	1	4	7	9
$f^{-1}(x)$	–1	–4	–7	–8

d.

x	–1	–4	–7	–9
y	1	4	7	8

x	1	4	7	8
$f^{-1}(x)$	1	4	7	9

e.

x	–1	–4	–7	–9
y	1	4	7	8

x	1	4	7	9
$f^{-1}(x)$	–1	–4	–7	–8

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice

Section 1.9 - Inverse Functions

HAS VARIABLES: True
DATE CREATED: 10/1/2014 11:27 AM
DATE MODIFIED: 10/22/2014 8:41 AM

41. Consider the functions given by $f(x) = x + 3$ and $f^{-1}(x) = x - 3$. Evaluate $f(f^{-1}(x))$ and $f^{-1}(f(x))$ for the indicated values of x. What can you conclude about the functions?

x	–1	0	4	49
$f(f^{-1}(x))$				
$f^{-1}(f(x))$				

a.

x	–1	0	4	49
$f(f^{-1}(x))$	–1	0	–4	–49
$f^{-1}(f(x))$	–1	0	4	49

We can conclude that, both the functions have the same value for negative variables.

b.

x	–1	0	4	49
$f(f^{-1}(x))$	–1	0	4	49
$f^{-1}(f(x))$	–1	0	4	49

We can conclude that, both the functions have the same value.

c.

x	–1	0	4	49
$f(f^{-1}(x))$	–1	0	4	49
$f^{-1}(f(x))$	–1	0	–4	–49

We can conclude that, both the functions have the same value for negative variables.

d.

x	–1	0	4	49
$f(f^{-1}(x))$	–1	0	–4	49
$f^{-1}(f(x))$	–1	0	4	–49

We can conclude that, both the functions are opposite of each other.

e.

x	–1	0	4	49
$f(f^{-1}(x))$	–1	0	4	–49
$f^{-1}(f(x))$	–1	0	–4	49

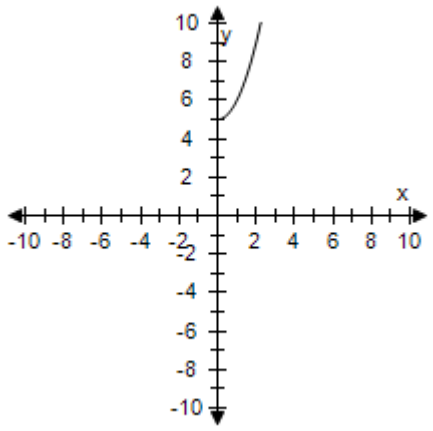
We can conclude that, both the functions are opposite of each other.

ANSWER: b
POINTS: 1
REFERENCES: 2.7.114
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/18/2015 4:07 AM

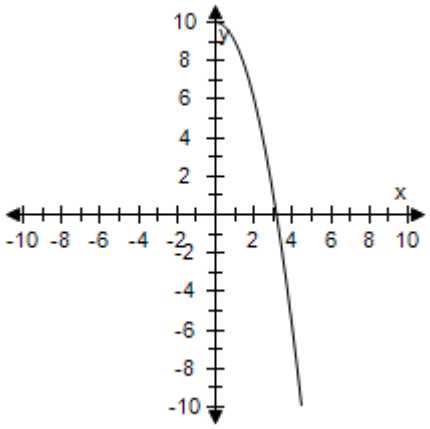
Section 1.9 - Inverse Functions

42. Restrict the domain of $f(x) = x^2 + 5$ to $x \geq 0$. Use a graphing utility to graph the function.

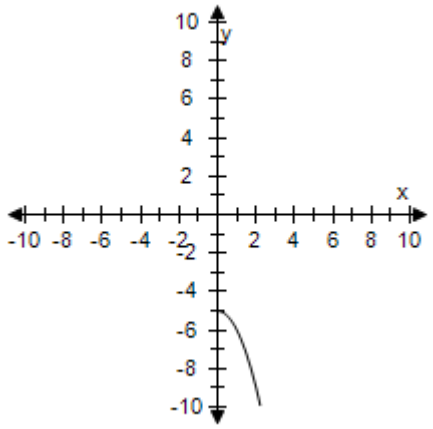
a.



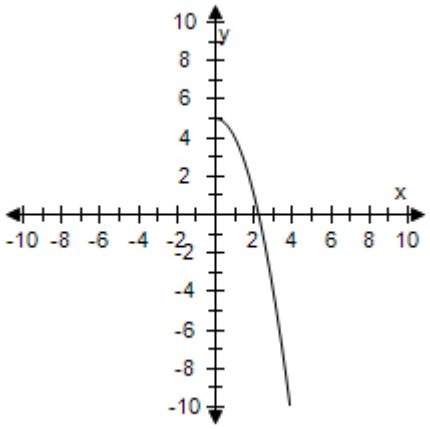
b.



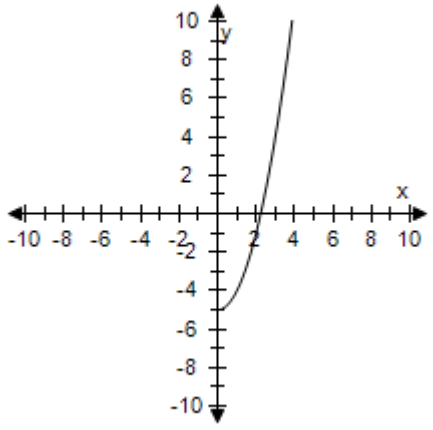
c.



d.



e.



ANSWER: a
POINTS: 1
REFERENCES: 2.7.115
QUESTION TYPE: Multi-Mode (Multiple choice)

Section 1.9 - Inverse Functions

HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/22/2014 8:49 AM

43. Find the inverse function of f.
$f(x) = x^5 - 9$

a. $f^{-1}(x) = \sqrt[5]{x} + 9$

b. $f^{-1}(x) = \sqrt[5]{x} - 9$

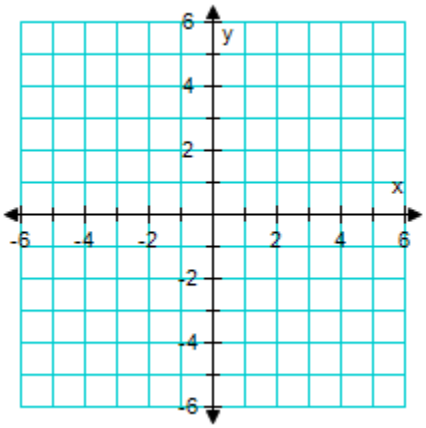
c. $f^{-1}(x) = -\sqrt[5]{x} - 9$

d. $f^{-1}(x) = -\sqrt[5]{x - 9}$

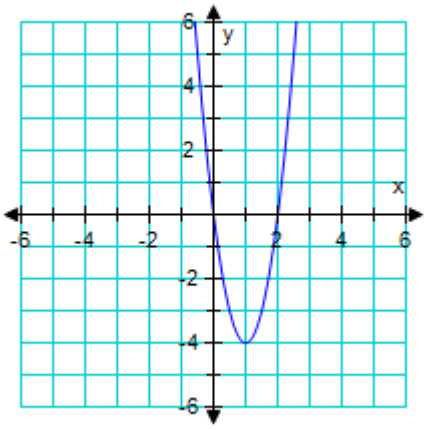
e. $f^{-1}(x) = \sqrt[5]{x + 9}$

ANSWER: e
POINTS: 1
REFERENCES: 2.7.14
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/22/2014 8:50 AM

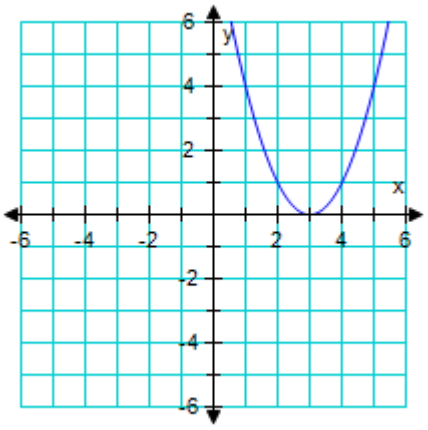
44. Graph the given function.
$f(x) = (x - 3)^2$



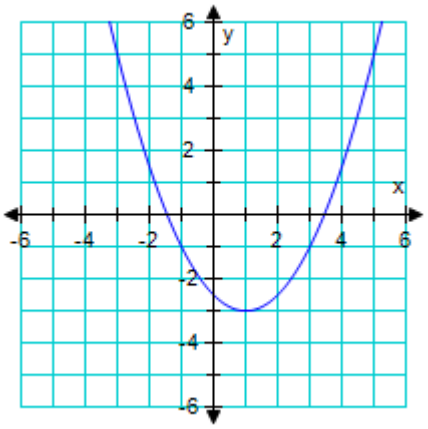
a.



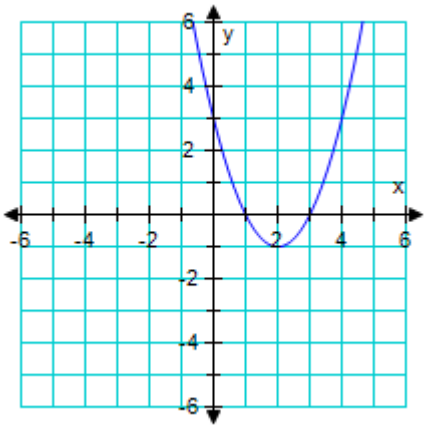
b.



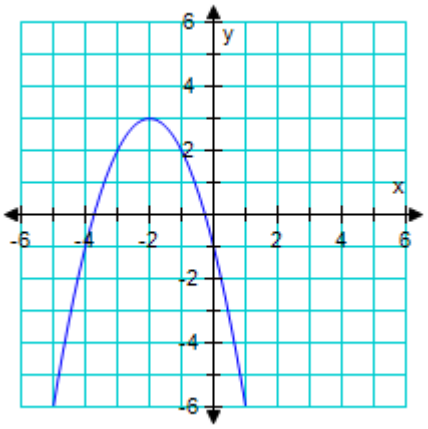
c.



d.



e.



ANSWER: b
POINTS: 1
REFERENCES: 2.7.15a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/2/2014 10:15 AM

Section 1.9 - Inverse Functions

45. Find the inverse function of f.

$$f(x) = \frac{8x - 1}{3x - 4}, x \neq \frac{4}{3}$$

a. $f^{-1}(x) = -\frac{3x - 4}{8x - 1}, x \neq \frac{1}{8}$

b. $f^{-1}(x) = \frac{3x - 4}{8x - 1}, x \neq \frac{1}{8}$

c. $f^{-1}(x) = \frac{3x - 8}{4x - 1}, x \neq -4$

d. $f^{-1}(x) = \frac{4x - 1}{3x - 8}, x \neq \frac{8}{3}$

e. $f^{-1}(x) = \frac{-4x + 1}{3x - 8}, x \neq \frac{8}{3}$

ANSWER: d
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 10/2/2014 11:48 AM
DATE MODIFIED: 10/22/2014 8:54 AM

46. Determine whether the function has an inverse function. If it does, find the inverse function.
$f(x) = x^2 + 5$

a. $f^{-1}(x) = \sqrt{x} + 5, x \geq 0$

b. $f^{-1}(x) = \sqrt{x - 5}$

c. $f^{-1}(x) = \sqrt{x} - 5$

d. $f^{-1}(x) = \sqrt{x + 5}, x \geq -5$

e. No inverse function exists.

ANSWER: e
POINTS: 1
REFERENCES: 2.7.63
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/18/2015 4:09 AM

47. Determine whether the function has an inverse function. If it does, find the inverse function.

$$f(x) = \begin{cases} 8x + 13, x < -2 \\ (x + 2)^2 - 3, x \geq -2 \end{cases}$$

Section 1.9 - Inverse Functions

a. $f^{-1}(x) = \begin{cases} \frac{x-13}{8}, x < -2 \\ \sqrt{x+3}-2, x \geq -2 \end{cases}$

b. $f^{-1}(x) = \begin{cases} \frac{x-13}{8}, x < -2 \\ \sqrt{x+1}, x \geq -2 \end{cases}$

c. $f^{-1}(x) = \begin{cases} \frac{x-13}{8}, x < -3 \\ \sqrt{x+3}-2, x \geq -3 \end{cases}$

d. $f^{-1}(x) = \begin{cases} \frac{x+13}{8}, x < -3 \\ \sqrt{x+3}-2, x \geq -3 \end{cases}$

e. No inverse function exists.

ANSWER: c
POINTS: 1
REFERENCES: 2.7.72
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/3/2014 2:49 AM

48. Use the functions given by $f(x) = \frac{x}{8} - 1$ and $g(x) = x^3$ to find the indicated value.

$(f \circ g)^{-1}(5)$

a. $-\frac{387}{512}$

b. $2\sqrt[3]{6}$

c. $-2\sqrt[3]{6}$

d. $2\sqrt[3]{4}$

e. Undefined

ANSWER: b
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 10/3/2014 3:49 AM
DATE MODIFIED: 10/22/2014 9:10 AM

49. Determine algebraically whether f and g are inverse functions.

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$f(x) = 5x - 3$ $\quad g(x) = \dfrac{x+3}{5}$

a. Yes, f and g are inverse functions.

$$f(g(x)) = f\left(\frac{x+3}{5}\right) = 5\left(\frac{x+3}{5}\right) - 3 = x + 3 - 3 = x$$

$$g(f(x)) = g(5x-3) = \frac{5x-3+3}{5} = \frac{5x}{5} = x$$

b. No, f and g are not inverse functions.

$$f(g(x)) = f\left(\frac{x+3}{5}\right) = 5\left(\frac{x+3}{5}\right) - 3 = x + 3 - 3 = x$$

$$g(f(x)) = g(5x-3) = \frac{5x-3+3}{5} = \frac{5x}{5} = -x$$

ANSWER: a
POINTS: 1
REFERENCES: 2.7.24a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/3/2014 4:49 AM

50. Determine algebraically whether f and g are inverse functions.

$f(x) = \sqrt{x+6}$ $\quad g(x) = x^2 - 6, x \geq 0$

a. Yes, f and g are inverse functions.

$$f(g(x)) = f(x^2-6) = \sqrt{(x^2-6)+6} = \sqrt{x^2} = x$$

$$g(f(x)) = g\left(\sqrt{x+6}\right) = \left(\sqrt{x+6}\right)^2 - 6 = x + 6 - 6 = x$$

b. No, f and g are not inverse functions.

$$f(g(x)) = f(x^2-6) = \sqrt{(x^2-6)+6} = \sqrt{x^2} = x$$

$$g(f(x)) = g\left(\sqrt{x+6}\right) = \left(\sqrt{x+6}\right)^2 - 6 = -x + 6 - 6 = -x$$

ANSWER: a
POINTS: 1
REFERENCES: 2.7.29a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/18/2015 4:15 AM

51. Find the inverse of the one-to-one function.

$y = 6x$

Section 1.9 - Inverse Functions

$f^{-1}(x) =$ _____
ANSWER: $\frac{x}{6}$
POINTS: 1
QUESTION TYPE: Subjective Short Answer
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/22/2014 9:14 AM

52. Find the inverse of the one-to-one function.

$y = \frac{1}{8x}$

$f^{-1}(x) =$ _____
ANSWER: $\frac{1}{8x}$
POINTS: 1
QUESTION TYPE: Subjective Short Answer
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/22/2014 9:16 AM

53. Find the inverse of the one-to-one function.

$y = 5x + 4$

$f^{-1}(x) =$ _____
ANSWER: $\frac{x - 4}{5}$
POINTS: 1
QUESTION TYPE: Subjective Short Answer
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/22/2014 9:19 AM

54. Show algebraically that f and g are inverse functions.

$f(x) = 9x + 9$ $\quad g(x) = \frac{x - 9}{9}$

ANSWER:

$$f(g(x)) = f\left[\frac{x - 9}{9}\right] = 9\left[\frac{x - 9}{9}\right] + 9 = x - 9 + 9 = x$$

$$g(f(x)) = g(9x + 9) = \frac{9x + 9 - 9}{9} = \frac{9x}{9} = x$$

POINTS: 1

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REFERENCES: 58
QUESTION TYPE: Subjective Short Answer
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/3/2014 6:36 AM

55. Show algebraically that f and g are inverse functions.

$f(x) = \sqrt{x-8}, x \geq 8$ $\quad\quad$ $g(x) = x^2 + 8, x \geq 0$

ANSWER:

$$f(g(x)) = f\left(x^2+8\right) = \sqrt{\left(x^2+8\right)-8} = \sqrt{x^2} = x$$

$$g(f(x)) = g\left(\sqrt{x-8}\right) = \left(\sqrt{x-8}\right)^2+8 = x-8+8 = x$$

POINTS: 1
REFERENCES: 59
QUESTION TYPE: Subjective Short Answer
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/3/2014 6:41 AM

56. Determine whether the function is one-to- one.

$y = 3x$

a. No, it isn't one-to-one.
b. Yes, it is one-to-one.

ANSWER: b
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/3/2014 6:42 AM

57. Determine whether the function is one-to-one.

$y = (x - 5)^2; x \geq 5$

a. No, it isn't one-to-one.
b. Yes, it is one-to-one.

ANSWER: b
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/3/2014 6:44 AM

Section 1.9 - Inverse Functions

58. Find the inverse of the one-to-one function.

$y = 5x + 9$

a. $f^{-1}(x) = \dfrac{x + 9}{5}$

b. $f^{-1}(x) = \dfrac{x - 9}{5}$

c. $f^{-1}(x) = \dfrac{5}{x - 9}$

d. $f^{-1}(x) = \dfrac{x - 5}{9}$

e. none of the above

ANSWER: b
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/22/2014 9:24 AM

59. Find the inverse of the one-to-one function.

$y = 3x$

a. $f^{-1}(x) = 3x^2$

b. $f^{-1}(x) = 3x$

c. $f^{-1}(x) = \dfrac{x}{3}$

d. $f^{-1}(x) = \dfrac{3}{x}$

e. $f^{-1}(x) = 9x$

ANSWER: c
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 5/18/2015 4:12 AM

60. Find the inverse function of f.

$f(x) = x^3 - 4$

a. $f^{-1}(x) = -\sqrt[3]{x} - 4$

b. $f^{-1}(x) = \sqrt[3]{x} - 4$

c. $f^{-1}(x) = -\sqrt[3]{x-4}$

d. $f^{-1}(x) = \sqrt[3]{x+4}$

e. $f^{-1}(x) = \sqrt[3]{x}+4$

ANSWER: d
POINTS: 1
REFERENCES: 60
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/22/2014 9:28 AM

61. The function $f(x) = x^2 - 2$ is one-to-one on the domain $(x \le 0)$. Find $f^{-1}(x)$.

a. $f^{-1}(x) = -\sqrt{x+2}$

b. $f^{-1}(x) = \dfrac{1}{x^2-2}$

c. $f^{-1}(x) = \sqrt{x+2}$

d. $f^{-1}(x) = \sqrt{x-2}$

e. $f^{-1}(x) = x^2 + 2$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/3/2014 8:08 AM

62. Find the inverse of the one-to-one function.

$$y = \frac{1}{8x}$$

a. $f^{-1}(x) = \dfrac{8}{x}$

b. $f^{-1}(x) = \dfrac{x}{8}$

c. $f^{-1}(x) = 8x$

d. $f^{-1}(x) = \dfrac{1}{8x}$

e. inverse does not exist

ANSWER: d

Section 1.9 - Inverse Functions

POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:18 PM
DATE MODIFIED: 10/3/2014 8:18 AM