MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Solve for x. Check your answers.

1) $x - 19 = 15$
A) $x = -4$
B) $x = -34$
C) $x = 4$
D) $x = 34$
Answer: D

2) $-9 = x - 7$
A) $x = -16$
B) $x = 16$
C) $x = -2$
D) $x = 2$
Answer: C

3) $x - 5 = 18$
A) $x = 23$
B) $x = -23$
C) $x = -13$
D) $x = 13$
Answer: A

4) $x + 18 = 19$
A) $x = 37$
B) $x = -37$
C) $x = 1$
D) $x = -1$
Answer: C

5) $-10 = x - 3$
A) $x = -13$
B) $x = -7$
C) $x = 13$
D) $x = 7$
Answer: B

6) $x - 3 = 5$
A) $x = -8$
B) $x = 2$
C) $x = 8$
D) $x = -15$
Answer: C

7) $-16 = x - 14$
A) $x = -2$
B) $x = -30$
C) $x = 224$
D) $x = 2$
Answer: A

8) $9 + 11 + x = 6 + 8$

A) $x = -22$
B) $x = -6$
C) $x = 16$
D) $x = 34$

Answer: B

9) $5 - 17 + 8 = 6 + x - 3$

A) $x = -13$
B) $x = 33$
C) $x = 5$
D) $x = -7$

Answer: D

10) $17 - 12 = x - 6$

A) $x = 35$
B) $x = -1$
C) $x = 11$
D) $x = 23$

Answer: C

Find the value of x that satisfies the equation.

11) $-0.6 + x = 17$

A) $x = 17.1$
B) $x = 16.4$
C) $x = 17.6$
D) $x = 15.9$

Answer: C

12) $8.3 = 15 - x$

A) $x = 6.7$
B) $x = 22.8$
C) $x = 23.3$
D) $x = 6.2$

Answer: A

13) $0.1 + x + 2.3 = 3.6$

A) $x = 6$
B) $x = 1.4$
C) $x = 5.8$
D) $x = 1.2$

Answer: D

14) $2.9 = 21.6 - x$

A) $x = 24$
B) $x = 18.7$
C) $x = 24.5$
D) $x = 18.2$

Answer: B

15) $-7.5 + x = 17.2$

A) $x = 9.7$
B) $x = 9.2$
C) $x = 24.2$
D) $x = 24.7$

Answer: D

16) $\frac{1}{2} + x = 5$

A) $x = 9$
B) $x = 2$
C) $x = \frac{11}{2}$
D) $x = \frac{9}{2}$

Answer: D

17) $x + \frac{4}{7} = \frac{6}{7}$

A) $x = \frac{5}{7}$
B) $x = \frac{10}{7}$
C) $x = 2$
D) $x = \frac{2}{7}$

Answer: D

18) $x - \frac{1}{2} = \frac{3}{4}$

A) $x = 1$
B) $x = \frac{1}{2}$
C) $x = \frac{5}{4}$
D) $x = \frac{1}{4}$

Answer: C

19) $x + 1\frac{1}{2} = 1\frac{2}{3}$

A) $x = \frac{3}{2}$

B) $x = \frac{1}{6}$

C) $x = 1$

D) $x = \frac{19}{6}$

Answer: B

20) $x - \frac{13}{24} = -\frac{3}{8}$

A) $x = -\frac{1}{6}$

B) $x = \frac{1}{6}$

C) $x = \frac{11}{12}$

D) $x = -\frac{11}{12}$

Answer: B

21) $\frac{3}{8} - \frac{1}{2} = x - \frac{3}{16}$

A) $x = \frac{7}{32}$

B) $x = \frac{17}{16}$

C) $x = \frac{1}{16}$

D) $x = -\frac{5}{16}$

Answer: C

Determine if the given solution is correct. If it is not, find the solution.

22) Is –5 the solution to $-16 - 8 = x - 17$?

A) no; $x = -7$

B) yes

C) no; $x = -41$

D) no; $x = -25$

Answer: A

23) Is -5 the solution to $x + 6 = 5 - 4$?

A) yes
B) no; $x = 3$
C) no; $x = 7$
D) no; $x = 15$

Answer: A

24) Is 13 the solution to $-4 + x = 10$?

A) yes
B) no; $x = -14$
C) no; $x = 14$
D) no; $x = 6$

Answer: C

Solve for x. Be sure to reduce your answer. Check your solution.

25) $-\frac{1}{3}x = -5$

A) $x = -9$
B) $x = 15$
C) $x = -8$
D) $x = 1$

Answer: B

26) $\frac{1}{8}x = 0$

A) $x = 8$
B) $x = 1$
C) $x = -8$
D) $x = 0$

Answer: D

27) $\frac{x}{4} = 5$

A) $x = 8$
B) $x = 9$
C) $x = 1$
D) $x = 20$

Answer: D

28) $\frac{3}{10}x = \frac{3}{10}$

A) $x = 3$
B) $x = 13$
C) $x = 1$
D) $x = 12$

Answer: C

29) $4x = -28$

A) $x = 32$
B) $x = -32$
C) $x = 1$
D) $x = -7$

Answer: D

30) $-30.4 = -7.6x$

A) $x = 4$
B) $x = 2$
C) $x = -22.8$
D) $x = 22.8$

Answer: A

31) $-8x = -32$

A) $x = 24$
B) $x = 2$
C) $x = 4$
D) $x = -24$

Answer: C

32) $-x = -7$

A) $x = -1$
B) $x = -7$
C) $x = 7$
D) $x = 0$

Answer: C

Find the value of the variable that satisfies the equation.

33) $4x + x = 45$

A) $x = 8$
B) $x = \frac{45}{4}$
C) $x = \frac{23}{2}$
D) $x = 9$

Answer: D

34) $-10x + x = -36$

A) $x = 4$
B) $x = -5$
C) $x = -4$
D) $x = 5$

Answer: A

35) $-2x - 12x = -17$

A) $x = \frac{14}{17}$

B) $x = -3$

C) $x = 238$

D) $x = \frac{17}{14}$

Answer: D

36) $3x + 16x = 15$

A) $x = -4$

B) $x = 285$

C) $x = \frac{15}{19}$

D) $x = \frac{19}{15}$

Answer: C

Determine if the given solution is correct. If it is not, find the solution.

37) Is -11 the solution to $-x = 11$

A) no; $x = -1$

B) yes

C) no; $x = 11$

D) no; $x = 0$

Answer: B

38) Is $\frac{58}{5}$ the solution to $5x = 53$

A) no; $x = \frac{53}{5}$

B) no; $x = 265$

C) yes

D) no; $x = \frac{5}{53}$

Answer: A

Find the value of the variable that satisfies the equation.

39) $\frac{x}{7} + 6 = 14$

A) $x = 15$

B) $x = 56$

C) $x = 140$

D) $x = 142$

Answer: B

40) $8x + 2 = 66$

A) $x = 6$
B) $x = 60$
C) $x = 56$
D) $x = 8$

Answer: D

41) $2x - 3 = 9$

A) $x = 10$
B) $x = 6$
C) $x = 7$
D) $x = 14$

Answer: B

42) $-13 = -5x - 3$

A) $x = 5$
B) $x = -1$
C) $x = 2$
D) $x = -5$

Answer: C

43) $\frac{1}{5}x - \frac{1}{5} = -6$

A) $x = 31$
B) $x = -31$
C) $x = -29$
D) $x = 29$

Answer: C

44) $\frac{1}{2}x - 5 = 1$

A) $x = -12$
B) $x = 12$
C) $x = 8$
D) $x = -8$

Answer: B

45) $5x + 10 = 1 - 2x$

A) $x = -\frac{9}{7}$

B) $x = -\frac{7}{9}$

C) $x = \frac{3}{11}$

D) $x = \frac{7}{9}$

Answer: A

46) $-4x - 10 = -1 - 8x$

A) $x = \frac{9}{4}$

B) $x = -\frac{4}{9}$

C) $x = \frac{4}{9}$

D) $x = \frac{12}{11}$

Answer: A

47) $-8x + 1 + 6x = -3x + 6$

A) $x = -1$

B) $x = -6$

C) $x = 6$

D) $x = 5$

Answer: D

48) $50 + 14x = 4x$

A) $x = -5$

B) $x = 6$

C) $x = 5$

D) $x = -6$

Answer: A

49) $-4x = -11x + 42$

A) $x = -\frac{21}{2}$

B) $x = 6$

C) $x = \frac{1}{6}$

D) $x = -\frac{14}{5}$

Answer: B

Solve for the variable.

50) $-1(x + 3) = -11$

A) $x = -8$

B) $x = 8$

C) $x = 14$

D) $x = -14$

Answer: B

51) $4(x + 2) = 5(x - 8)$

A) $x = -48$

B) $x = 48$

C) $x = -32$

D) $x = 32$

Answer: B

52) $2(2x - 5) = 3(x + 2)$

A) $x = -2$

B) $x = 4$

C) $x = -4$

D) $x = 16$

Answer: D

53) $7(x + 2) - (6x - 5) = -2$

A) $x = 9$

B) $x = 21$

C) $x = 17$

D) $x = -21$

Answer: D

Determine whether the given solution is correct. If it is not, find the solution.

54) Is $-\frac{12}{17}$ the solution for $7x + 5 = -7 - 10x$?

A) No; $x = -\frac{17}{12}$

B) No; $x = \frac{3}{2}$

C) No; $x = \frac{17}{12}$

D) Yes

Answer: D

55) Is $\frac{9}{17}$ the solution for $-5x + 7 = -10 + 4x$?

A) Yes

B) No; $x = -\frac{9}{17}$

C) No; $x = \frac{1}{3}$

D) No; $x = \frac{17}{9}$

Answer: D

56) Is 5 the solution for $-9x + 6 + 7x = -3x + 11$?

A) No; $x = 11$

B) Yes

C) No; $x = -11$

D) No; $x = -6$

Answer: B

57) Is 9 the solution for $-9x + 4 + 7x = -3x + 9$?

A) Yes
B) No; $x = 5$
C) No; $x = -9$
D) No; $x = -4$

Answer: B

Solve.

58) $x - \frac{1}{2}x - 3 = 1$

A) $x = -4$
B) $x = 4$
C) $x = 8$
D) $x = -8$

Answer: C

59) $\frac{2}{5}x - \frac{1}{3}x = 4$

A) $x = -60$
B) $x = 60$
C) $x = -120$
D) $x = 120$

Answer: B

60) $\frac{1}{4}x - \frac{3}{8}x = 5$

A) $x = -35$
B) $x = -40$
C) $x = 35$
D) $x = 40$

Answer: B

61) $\frac{1}{5}(x + 6) = \frac{1}{6}(x + 8)$

A) $x = -12$
B) $x = -4$
C) $x = 4$
D) $x = 3$

Answer: C

62) $\frac{1}{3}x - \frac{1}{3} = -5$

A) $x = 14$
B) $x = -16$
C) $x = -14$
D) $x = 16$

Answer: C

63) $\frac{-6x + 5}{4} + 1 = -\frac{7x}{3}$

A) $x = \frac{3}{10}$

B) $x = \frac{27}{46}$

C) $x = -\frac{3}{10}$

D) $x = -\frac{27}{10}$

Answer: D

64) $\frac{1}{6}(x - 12) - \frac{1}{2}(x - 2) = x - 8$

A) $x = \frac{21}{4}$

B) $x = \frac{27}{4}$

C) $x = \frac{15}{4}$

D) $x = \frac{33}{4}$

Answer: A

65) $\frac{1}{2}x - \left(x - \frac{1}{9}\right) = \frac{1}{18}(x + 1)$

A) $x = \frac{1}{10}$

B) $x = -\frac{3}{10}$

C) $x = \frac{1}{8}$

D) $x = -\frac{1}{26}$

Answer: A

66) $\frac{4(7 - x)}{3} = x$

A) $x = 4$

B) $x = 7$

C) $x = -4$

D) $x = \frac{28}{5}$

Answer: A

67) $\frac{3(y-2)}{5} = 1 - 3y$

A) $y = \frac{11}{6}$

B) $y = -\frac{11}{18}$

C) $y = \frac{7}{6}$

D) $y = \frac{11}{18}$

Answer: D

68) $-0.08y + 0.14(3000 - y) = 0.28y$

A) $y = 840$

B) $y = 210$

C) $y = 2100$

D) $y = 2520$

Answer: A

69) $-0.15(40) + 0.6x = 0.3(40 + x)$

A) $x = 50$

B) $x = 60$

C) $x = 70$

D) $x = 30$

Answer: B

70) $0.8x - 0.4(20 + x) = 0.40(20)$

A) $x = 30$

B) $x = 40$

C) $x = 50$

D) $x = 20$

Answer: B

71) $1.6x + 2.5 = 0.8x - 0.3$

A) $x = -3.5$

B) $x = 0.286$

C) $x = -3.85$

D) $x = -3.6$

Answer: A

72) $1.5x + 4.3 = 0.7x + 2.54$

A) $x = -2.2$

B) $x = -2.21$

C) $x = -2.222$

D) $x = -0.455$

Answer: A

Answer Yes or No.

73) Is 42 a solution to $x - 5 = \frac{6}{7}x + 1$?

A) Yes
B) No

Answer: A

74) Is –24 a solution to $x - 5 = \frac{3}{4}x + 1$?

A) Yes
B) No

Answer: B

75) Is –4 a solution to $\frac{1}{3}(x + 6) = \frac{1}{6}x + \frac{4}{3}$?

A) Yes
B) No

Answer: A

76) Is 4 a solution to $\frac{1}{4}(x + 6) = \frac{1}{8}x + 1$?

A) Yes
B) No

Answer: B

Solve.

77) $6(x + 5) = 6x + 30$

A) $x = 0$
B) Infinite number of solutions
C) No solution
D) $x = 60$

Answer: B

78) $7(x + 4) + 4 = 7x + 2$

A) Infinite number of solutions
B) No solution
C) $x = 10$
D) $x = 30$

Answer: B

79) $-7x + 9 + 5x = -2x + 14$

A) $x = 5$
B) Infinite number of solutions
C) $x = -9$
D) No solution

Answer: D

80) $7x - 3 - 2x + 1 = 9x - 4x - 5$

A) $x = 0$
B) No solution
C) $x = -64$
D) Infinite number of solutions

Answer: B

81) $8(x + 1) = 33x + 33 - 25x - 25$

A) $x = 1$
B) No solution
C) $x = 0$
D) Infinite number of solutions

Answer: D

82) $-4(x + 7) + 86 = 2x - 6(x - 5)$

A) $x = 56$
B) $x = 116$
C) No solution
D) Infinite number of solutions

Answer: C

83) $24(x + 1) = 2(12x - 3) + 30$

A) $x = 24$
B) $x = 0$
C) Infinite number of solutions
D) No solution

Answer: C

84) $18x + 11(x + 1) = 29(x + 1) - 18$

A) $x = 0$
B) $x = 1$
C) No solution
D) Infinite number of solutions

Answer: D

Write an algebraic expression for the quantity. Let x represent the unknown value.

85) A quantity increased by 25.

A) $\frac{25}{x}$
B) $x + 25$
C) $25x$
D) $x - 25$

Answer: B

86) Ten greater than a number.

A) $x - 10$
B) $x + 10$
C) $10 > x$
D) $x > 10$

Answer: B

87) Four less than a number.

A) $4 < x$

B) $4 - x$

C) $x - 4$

D) $x < 4$

Answer: C

88) Ten divided by a number.

A) $\frac{10}{x}$

B) $10x$

C) $10 - x$

D) $\frac{x}{10}$

Answer: A

89) A value decreased by six.

A) $x + 6$

B) $\frac{6}{x}$

C) $6 - x$

D) $x - 6$

Answer: D

90) Three–fourths of a quantity.

A) $\frac{3}{4} - x$

B) $\frac{3x}{4}$

C) $\frac{3}{4} + x$

D) $x - \frac{3}{4}$

Answer: B

91) The sum of eight times a number and seven.

A) $8(x + 7)$

B) $8x + 7$

C) $7(x + 8)$

D) $7x + 8$

Answer: B

92) Two times the sum of a number and four.

A) $4x + 2$

B) $4(x + 2)$

C) $2x + 4$

D) $2(x + 4)$

Answer: D

93) Eight less than double a number.

A) 8 – 2x
B) 2 – 8x
C) 2x – 8
D) 8x – 2

Answer: C

94) Eight times a number decreased by double the same number.

A) 8(x – 2)
B) 8x – 2
C) 8x – 2x
D) 2x – 8x

Answer: C

Write an algebraic expression for the quantities being compared.

95) Evan works 12 hours per week more than Marc.

A) x – 12 = no. of hours Evan works
x = no. of hours Marc works
B) 12 – x = no. of hours Evan works
x = no. of hours Marc works
C) x + 12 = no. of hours Evan works
x = no. of hours Marc works
D) 12 – x = no. of hours Marc works
x = no. of hours Evan works

Answer: C

96) At Dave's Deli, the reuben sandwich cost $1.65 more than the turkey sandwich.

A) x – 1.65 = the cost of the reuben sandwich
x = the cost of the turkey sandwich
B) 1.65 – x = the cost of the turkey sandwich
x = the cost of the reuben sandwich
C) x + 1.65 = the cost of the reuben sandwich
x = the cost of the turkey sandwich
D) 1.65 – x = the cost of the reuben sandwich
x = the cost of the turkey sandwich

Answer: C

97) The length of a rectangle is 28 feet more than double the width.

A) 2ℓ + 28 = width of rectangle
ℓ = length of rectangle
B) 2ℓ – 28 = width of rectangle
ℓ = length of rectangle
C) 2w – 28 = length of rectangle
w = width of rectangle
D) 2w + 28 = length of rectangle
w = width of rectangle

Answer: D

98) The attendance on Monday was 43 people more than on Tuesday. The attendance on Wednesday was 44 people fewer than on Tuesday.

A) x = attendance on Monday
x + 43 = attendance on Tuesday
x – 44 = attendance on Wednesday

B) x – 44 = attendance on Monday
x = attendance on Tuesday
x + 43 = attendance on Wednesday

C) x + 43 = attendance on Monday
x = attendance on Tuesday
x – 44 = attendance on Wednesday

D) x + 43 = attendance on Monday
x + 44 = attendance on Tuesday
x = attendance on Wednesday

Answer: C

99) The first angle of a triangle is double the third angle. The second angle of a triangle is 34 degrees less than the third angle.

A) first angle = x – 34
second angle = 2x
third angle = x

B) first angle = x
second angle = x – 34
third angle = 2x

C) first angle = 2x
second angle = x – 34
third angle = x

D) first angle = 2x + 34
second angle = x – 34
third angle = x

Answer: C

Solve.

100) What number minus 216 gives 551?

A) 767
B) –335
C) 335
D) –767

Answer: A

101) What number added to 330 gives 729?

A) 399
B) –399
C) 1059
D) –1059

Answer: A

102) A number divided by eight is 328. What is the number?

A) 320
B) 41
C) 2624
D) 336

Answer: C

103) Seven times a number is five. What is the number?

A) 35
B) –2
C) $\frac{7}{5}$
D) $\frac{5}{7}$

Answer: D

104) When six is subtracted from one–fourth of a number the result is 36. What is the original number?

A) 138
B) 150
C) 120
D) 168

Answer: D

105) Ten less than ten times a number is the same as twelve times the number. Find the number.

A) 5
B) $-\frac{1}{5}$
C) –5
D) $\frac{1}{5}$

Answer: C

106) When fifteen is reduced by one–third of a number, the result is 9. Find the number.

A) 6
B) 21
C) 18
D) –18

Answer: C

107) A motorcycle shop maintains an inventory of three times as many new bikes as used bikes. If there are 105 new bikes, how many used bikes are now in stock?

A) 53 used bikes
B) 315 used bikes
C) 70 used bikes
D) 35 used bikes

Answer: D

108) The inventory at AutoPlace is one–eighth the inventory at CarMart. If AutoPlace has 168 vehicles on the lot, how many vehicles does CarMart have in stock?
A) 1344 vehicles
B) 176 vehicles
C) 21 vehicles
D) 672 vehicles

Answer: A

109) A promotional deal for phone service charges a $15 basic fee plus $0.05 per minute for all calls. If Joe's phone bill was $70 under this promotional deal, how many minutes of phone calls did he make? Round to the nearest integer, if necessary.
A) 1700 min
B) 3 min
C) 11 min
D) 1100 min

Answer: D

110) Larry makes $24 per hour for a 40–hour week and time an a half for every hour over 40 hours. If Larry made $1500 last week, how many overtime hours did he work?
A) 55 hr
B) 22.5 hr
C) 15 hr
D) 62.5 hr

Answer: C

111) The cost of renting a scooter is $18 a day plus 5 cents per mile. How far can Michelle drive in one day if she only has $41?
A) 95 mi
B) 460 mi
C) 23 mi
D) 532 mi

Answer: B

112) The force of gravity on a planet varies with the mass of the planet. If the force of gravity on a planet in a distant solar system is about four and one half times that of Earth, how much would an object weighing 270 pounds on Earth weigh on this planet?
A) 60 lb
B) 600 lb
C) 274.5 lb
D) 1215 lb

Answer: D

113) Two cars start from the same point and travel in the same direction. If one car is traveling 56 miles per hour and the other car is traveling at 45 miles per hour, how far apart will they be after 7.7 hours?
A) 777.7 mi
B) 431.2 mi
C) 84.7 mi
D) 346.5 mi

Answer: C

114) Two trains leave a train station at the same time. One travels north at 12 miles per hour. The other train travels south at 7 miles per hour. In how many hours will the two trains be 98.8 miles apart?

A) 5.7 hr
B) 5.2 hr
C) 2.6 hr
D) 10.4 hr

Answer: B

115) Libby's 4 quiz scores in her math class are 86, 91, 81, and 86. What score does she need to obtain on her next quiz to average an 85? Round to the nearest whole number if necessary.

A) 84
B) 67
C) 81
D) 82

Answer: C

116) Allan's 4 quiz scores in his math class are 87, 89, 88, and 78. What score does he need to obtain on his exam to average an 85 if an exam counts as much as two quizzes?

A) 68
B) 76
C) 84
D) 83

Answer: C

117) Michael hired Heather to iron his dress shirts. Heather charges $40 an hour plus $0.25 for each shirt ironed. Heather worked 4 hours and sent a bill to Michael for $174. How many shirts did Heather iron?

A) 14 shirts
B) 224 shirts
C) 696 shirts
D) 56 shirts

Answer: D

118) Raymond's job pays $20 per hour for the first forty hours and $30 per hour for each hour in the week worked above the 40 hours. If he earned $980 this week, how many overtime hours did he work?

A) 180 hours
B) 46 hours
C) 9 hours
D) 6 hours

Answer: D

119) Bruce and Elaine hired a magician for their daughter's birthday party. The magician charged $32 plus $4 for each child attending the party. The total bill came to $92. How many children attended the party?

A) 15 children
B) 60 children
C) 8 children
D) 23 children

Answer: A

120) Amy charges $140 plus $35 an hour to do a friend's taxes. If her friend's total bill was $350, how many hours did Amy spend doing the taxes?
A) 14 hours
B) 6 hours
C) 4 hours
D) 350 hours

Answer: B

121) Susan charges $250 plus $50 an hour to clean houses. If a client's total bill were $700, how many hours did Susan spend cleaning the client's house?
A) 14 hours
B) 5 hours
C) 9 hours
D) 450 hours

Answer: C

122) A consultant charges $100 plus $25 an hour. How many hours did the consultant work if the total bill were $475?
A) 15 hours
B) 19 hours
C) 4 hours
D) 375 hours

Answer: A

123) Holly bought a sweater on sale for 20% off the original price. If she saved $12, what was the original price?
A) $240.00
B) $48.00
C) $2.40
D) $60.00

Answer: D

124) The number of employees that work at a company has increased by 40% over the past year. This year there are 356 more employees with the company than last year. How many employees were there last year?
A) 14,240 employees
B) 8.9 employees
C) 890 employees
D) 534 employees

Answer: C

125) When Milo got promoted at work, he received a 25% pay raise. He now earns $60,000 per year. What was his annual salary before his raise?
A) $15,000
B) $60,000
C) $12,000
D) $48,000

Answer: D

126) Logan bought stocks and later sold them for $1,081,600, making a profit of 4%. How much did he pay for the stocks?
A) $1,040,000
B) $2.704e+09
C) $41,600
D) $43,264

Answer: A

127) Ming got a 19% raise in her salary from last year. This year she is earning $135,660. How much did she make last year?
A) $21,660
B) $114,000
C) $2,577,540
D) $7140

Answer: B

128) A brother and sister split the $922,500 from the sale of their parent's house. According to the will, the sister was to receive 25% more than her brother, for having managed the property. How much money did the sister receive?
A) $410,000
B) $3,690,000
C) $230,625
D) $512,500

Answer: D

129) A salesperson in an expensive clothing store earns $2600 per month base pay plus a 6.5% commission on sales. One month she earns $5518.50. What were her sales for that month?
A) $297,050
B) $56,134
C) $294,450
D) $44,900

Answer: D

130) A local animal shelter accepts abandoned cats and dogs. They usually receive three times as many cats as dogs. They estimate that 80% of the cats and 50% of the dogs that come in need some kind of medical treatment. If they treated 319 animals last year, how many cats and dogs did they take in?
A) 110 dogs, 330 cats
B) 330 dogs, 990 cats
C) 110 dogs, 113 cats
D) 330 dogs, 110 cats

Answer: A

131) Alice invested some money at 19% simple interest. At the end of the year the total amount of her original principal and the interest was $11,305. How much did she originally invest?
A) $9500
B) $214,795
C) $595
D) $1805

Answer: A

132) Kevin invested part of his $10,000 bonus in a certificate of deposit that paid 6% annual simple interest, and the remainder in a mutual fund that paid 11% annual simple interest. If his total interest for that year was $700, how much did Kevin invest in the mutual fund?

A) $3000
B) $8000
C) $2000
D) $1000

Answer: C

133) A college student earned $5200 during summer vacation working as a waiter in a popular restaurant. The student invested part of the money at 10% and the rest at 7%. If the student received a total of $445 in interest at the end of the year, how much was invested at 10%?

A) $2700
B) $2600
C) $2500
D) $742

Answer: A

134) A bank loaned out $61,000, part of it at the rate of 11% per year and the rest at a rate of 5% per year. If the interest received was $4670, how much was loaned at 11%?

A) $34,000
B) $28,000
C) $27,000
D) $33,000

Answer: C

135) Melissa invested a sum of money at 3% annual simple interest. She invested three times that sum at 5% annual simple interest. If her total yearly interest from both investments was $7200, how much was invested at 3%?

A) $30,000
B) $90,000
C) $40,000
D) $270,000

Answer: C

136) If $14,000 is invested at 10% simple annual interest, how much should be invested at 12% annual simple interest so that the total yearly income from both investments is $5000?

A) $33,200
B) $3320
C) $3000
D) $30,000

Answer: D

137) How can $28,000 be invested, part at 4% annual simple interest and the remainder at 10% annual simple interest, so that the interest earned by the two accounts is equal at the end of the year?

A) $20,000 invested at 4%; $8000 invested at 10%
B) $18,000 invested at 4%; $10,000 invested at 10%
C) $8000 invested at 4%; $20,000 invested at 10%
D) $10,000 invested at 4%; $18,000 invested at 10%

Answer: A

138) Sue took her collection of nickels and dimes to deposit in the bank. She has five fewer nickels than dimes. Her total deposit was $28.40. How many dimes did she deposit?
A) 186 dimes
B) 377 dimes
C) 196 dimes
D) 191 dimes

Answer: D

139) Molly has $5.65 in coins. She has four more nickels than dimes. She has seven fewer quarters than dimes. How many quarters does she have?
A) 18 quarters
B) 22 quarters
C) 15 quarters
D) 11 quarters

Answer: D

140) A newspaper carrier has $2.30 in change. He has two more quarters than dimes but three times as many nickels as quarters. How many coins of each type does he have?
A) 7 quarters, 5 dimes, 21 nickels
B) 15 quarters, 13 dimes, 5 nickels
C) 5 quarters, 3 dimes, 15 nickels
D) 5 quarters, 7 dimes, 15 nickels

Answer: C

141) Keema cashed her paycheck and came home from the bank with $3220 in bills of the following denominations: hundreds, twenties, and fives. She has eight times as many fives as twenties and five more hundreds as twenties. How many of each denomination does she have?
A) 24 hundreds, 17 twenties, 128 fives
B) 22 hundreds, 18 twenties, 132 fives
C) 22 hundreds, 17 twenties, 136 fives
D) 23 hundreds, 17 twenties, 136 fives

Answer: C

142) A theatrical production company donated free tickets for their show to the local Boys & Girls Club. They claimed that the ticket value was $279.5 A child's ticket cost $4.75 and an adult ticket cost $7.25. If there were three times as many children's tickets as adult tickets, how many adults and children got to attend the show for free?
A) 39 adult tickets, 13 children's tickets
B) 39 adult tickets, 117 children's tickets
C) 13 adult tickets, 16 children's tickets
D) 13 adult tickets, 39 children's tickets

Answer: D

Replace the ? by < or >.

143) 7 ? –2
A) >
B) <

Answer: A

144) –6 ? –5

A) >

B) <

Answer: B

145) –0.9 ? 0.9

A) >

B) <

Answer: B

146) –3 ? $-\frac{19}{5}$

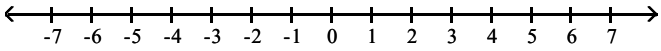
A) >

B) <

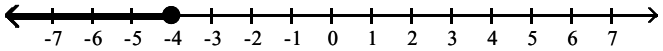
Answer: A

Graph the inequality on the number line.

147) x > –4



A)



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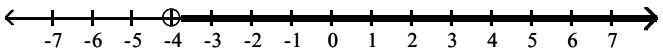

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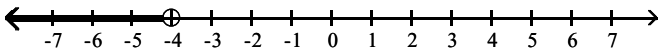
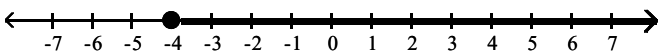
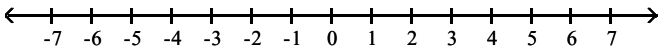


D)

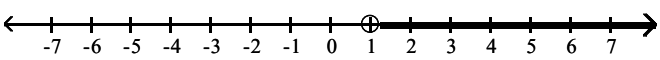


Answer: B

148) $x < 1$



A)



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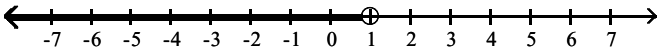

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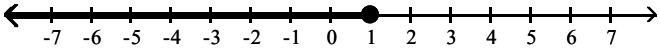

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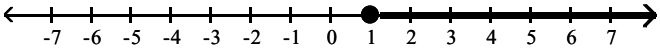
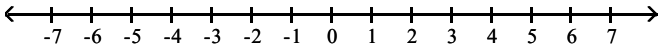
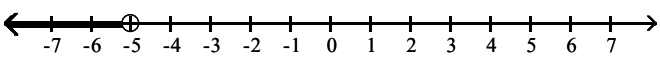


Answer: B

149) $x \geq -5$



A)



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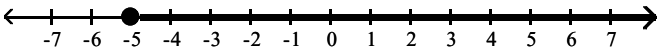
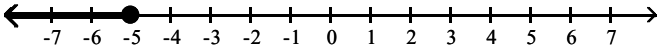


C)



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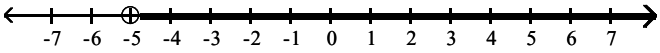
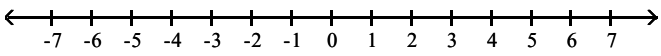
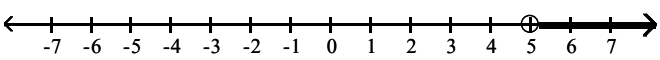


Answer: B

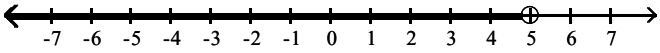
150) $x \leq 5$



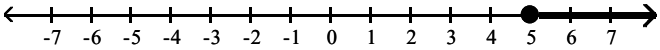
A)



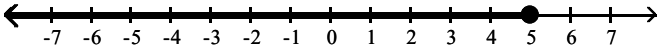
B)



C)

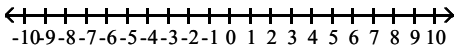


D)

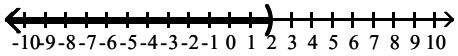


Answer: D

151) $x < 2$



A)



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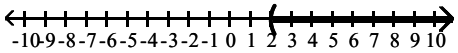

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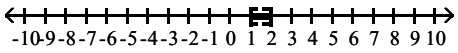

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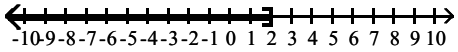
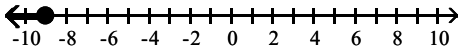


Answer: A

Translate each graph to an inequality using the variable x.

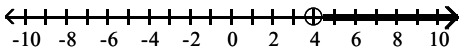
152)



A) $x \leq -9$
B) $x > -9$
C) $x < -9$
D) $x \geq -9$

Answer: A

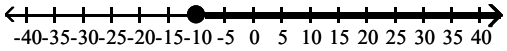
153)



A) $x \leq 4$
B) $x < 4$
C) $x \geq 4$
D) $x > 4$

Answer: D

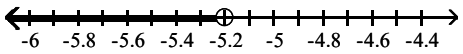
154)



A) $x \geq -10$
B) $x > -10$
C) $x < -10$
D) $x \leq -10$

Answer: A

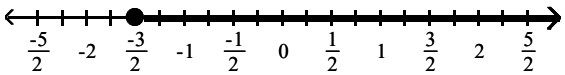
155)



A) $x \geq -5.2$
B) $x < -5.2$
C) $x > -5.2$
D) $x \leq -5.2$

Answer: B

156)



A) $x \leq -\frac{3}{2}$

B) $x > -\frac{3}{2}$

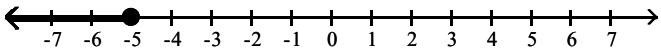
C) $x \geq -\frac{3}{2}$

D) $x < -\frac{3}{2}$

Answer: C

Translate the graph to an inequality using the variable x.

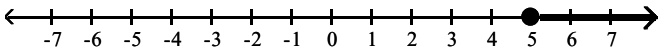
157)



A) $x \geq -5$
B) $x > -5$
C) $x < -5$
D) $x \leq -5$

Answer: D

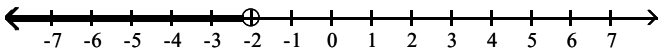
158)



A) $x > 5$
B) $x < 5$
C) $x \leq 5$
D) $x \geq 5$

Answer: D

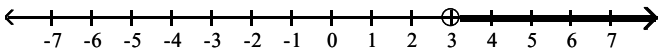
159)



A) $x \leq -2$
B) $x > -2$
C) $x < -2$
D) $x \geq -2$

Answer: C

160)



A) $x > 3$
B) $x \geq 3$
C) $x < 3$
D) $x \leq 3$

Answer: A

Translate the English statement into an inequality.

161) The cost of shoes must be less than $92. (Use the variable c for the cost.)

A) $c \leq 92$
B) $c < 92$
C) $c \geq 92$
D) $c > 92$

Answer: B

162) The speed of the bike is more than 16 mph. (Use the variable s for the speed.)

A) $s < 16$

B) $s > 16$

C) $s \leq 16$

D) $s \geq 16$

Answer: B

163) The number of people the school can hold is at most 138. (Use the variable p for number of people.)

A) $p \leq 138$

B) $p \geq 138$

C) $p > 138$

D) $p < 138$

Answer: A

164) The rocket must reach a speed of at least 951 mph. (Use the variable V for speed.)

A) $V < 951$

B) $V \geq 951$

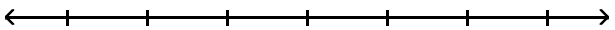
C) $V \leq 951$

D) $V > 951$

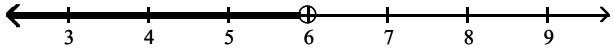
Answer: B

Solve the inequality. Graph the results.

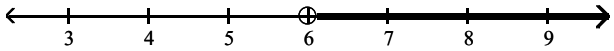
165) $x - 11 < -5$



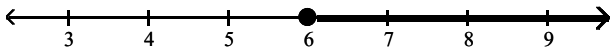
A) $x < 6$



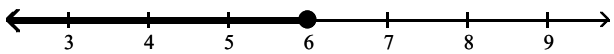
B) $x > 6$



C) $x \geq 6$

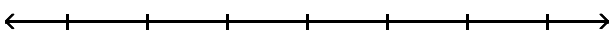


D) $x \leq 6$

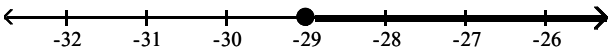


Answer: A

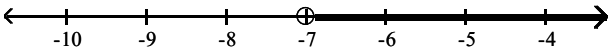
166) $-2x - 11 > -3x - 18$



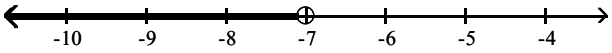
A) $x \geq -29$



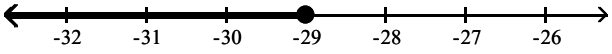
B) $x > -7$



C) $x < -7$

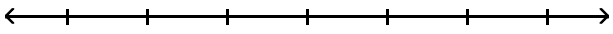


D) $x \leq -29$

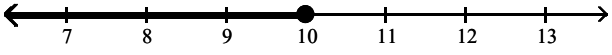


Answer: B

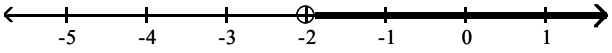
167) $-2x + 4 \leq -3x + 14$



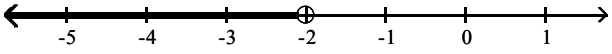
A) $x \leq 10$



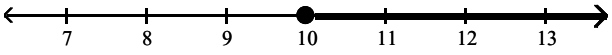
B) $x > -2$



C) $x < -2$

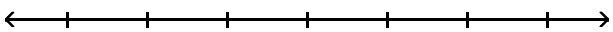


D) $x \geq 10$

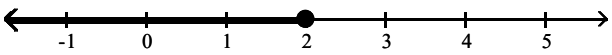


Answer: A

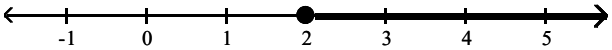
168) $13x + 3 \geq 12x + 5$



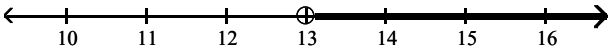
A) $x \leq 2$



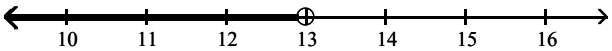
B) $x \geq 2$



C) $x > 13$

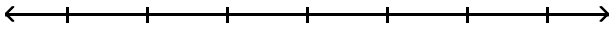


D) $x < 13$

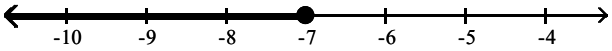


Answer: B

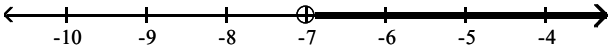
169) $x + 6 < -1$



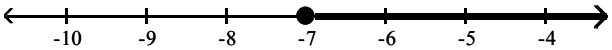
A) $x \leq -7$



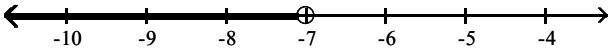
B) $x > -7$



C) $x \geq -7$

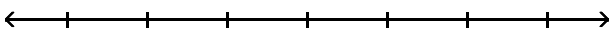


D) $x < -7$

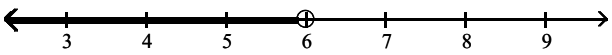


Answer: D

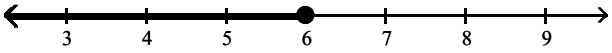
170) $-5 + 6x + 7 \geq 5x + 8$



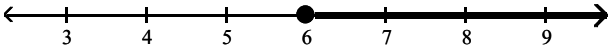
A) $x < 6$



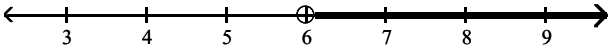
B) $x \leq 6$



C) $x \geq 6$

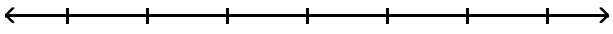


D) $x > 6$

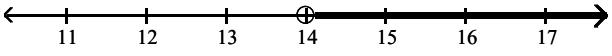


Answer: C

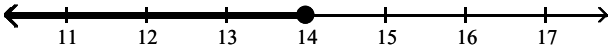
171) $\frac{x}{2} \geq 7$



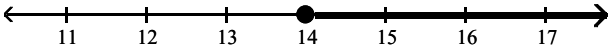
A)



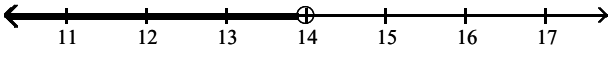
B)



C)

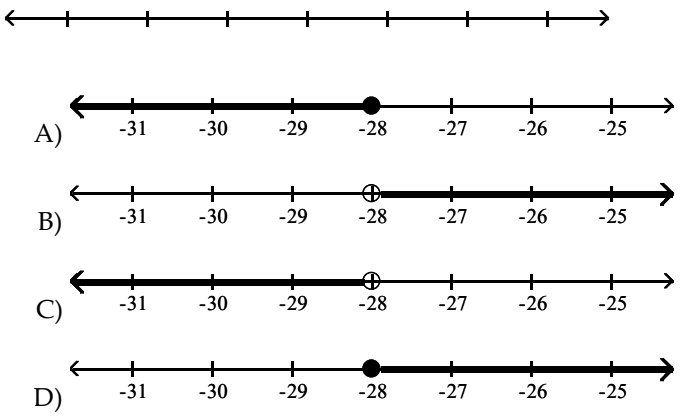


D)



Answer: C

172) $-7 < \frac{x}{4}$



Answer: B

Solve the inequality.

173) $-5x - 9 > -6x - 10$

A) $x \geq -19$
B) $x > -1$
C) $x \leq -19$
D) $x < -1$

Answer: B

174) $25x + 15 > 5(4x - 2)$

A) $x \geq -5$
B) $x \leq -5$
C) $x < -5$
D) $x > -5$

Answer: D

175) $-3(4x + 3) < -15x + 9$

A) $x \geq 6$
B) $x \leq 6$
C) $x < 6$
D) $x > 6$

Answer: C

176) $-14x + 16 \leq -2(6x - 9)$

A) $x \leq -1$
B) $x \geq -1$
C) $x > -1$
D) $x < -1$

Answer: B

177) $18x + 15 \leq 3(5x - 3)$

A) $x \leq -8$
B) $x > -8$
C) $x \geq -8$
D) $x < -8$

Answer: A

178) $-5x + 6 + 6x < 8 - 1x + 4$

A) $x < 3$
B) $x > 3$
C) $x \geq 9$
D) $x \leq 9$

Answer: A

179) $\frac{7}{18}(x + 2) > \frac{1}{6}(x + 5)$

A) $x < -0.25$
B) $x > 0.25$
C) $x > -0.25$
D) $x < 0.25$

Answer: B

180) $\frac{x + 4}{6} - \frac{1}{16} > \frac{x + 7}{8}$

A) $x > \frac{13}{2}$

B) $x > \frac{77}{2}$

C) $x < \frac{13}{2}$

D) $x < \frac{1}{2}$

Answer: A

181) $1.7(0.8 - x) - 1.7 > 2.5(x - 1.4)$ (Round to two decimal places if necessary)

A) $x < 0.75$
B) $x < 3.95$
C) $x > 3.95$
D) $x > 0.75$

Answer: A

Solve the problem.

182) John has received scores of 85, 88, 87, and 95 on her algebra tests. What is the minimum score he must receive on the fifth test to have an overall test score average of at least 90? (Hint: The average of a list of numbers is their sum divided by the number of numbers in the list.)

A) 95
B) 93
C) 94
D) 96

Answer: A

Solve for the variable.

183) $3x + 7.3 = 16.3$

A) $x = 1$
B) $x = 6$
C) $x = 10$
D) $x = 3$

Answer: D

184) $-8x + 3 = -2 - 2x$

A) $x = \frac{5}{6}$
B) $x = -10$
C) $x = -\frac{6}{5}$
D) $x = \frac{6}{5}$

Answer: A

185) $3(y + 8) = 4(y - 4)$

A) $y = -8$
B) $y = -40$
C) $y = 8$
D) $y = 40$

Answer: D

186) $\frac{2}{5}y - 3 = \frac{1}{3}y$

A) $y = -90$
B) $y = 45$
C) $y = -45$
D) $y = 90$

Answer: B

187) $2(x + 5) = 3(x - 8)$

A) $x = -14$
B) $x = 14$
C) $x = -34$
D) $x = 34$

Answer: D

188) $-8.8 + 5x - 6.1 + 3x - 2.3 = 5.1 + 9x + 1.8$

A) $x = -10.3$
B) $x = 24.1$
C) $x = -24.1$
D) $x = 10.3$

Answer: C

189) $\frac{5}{6}y + \frac{1}{8} = -\frac{1}{6}y - \frac{1}{6}$

A) $y = -\frac{1}{24}$

B) $y = -\frac{1}{7}$

C) $y = \frac{7}{24}$

D) $y = -\frac{7}{24}$

Answer: D

190) $7y + 1 + 6(y + 1) = 7y + 6$

A) $y = -\frac{1}{6}$

B) $y = 7$

C) $y = \frac{5}{2}$

D) $y = \frac{1}{10}$

Answer: A

191) $12(3x - 6) = 6x - 8$

A) $x = \frac{32}{21}$

B) $x = -\frac{32}{15}$

C) $x = \frac{8}{3}$

D) $x = \frac{32}{15}$

Answer: D

192) $5(x + 7) = 6(x - 3)$

A) $x = -17$

B) $x = 53$

C) $x = -53$

D) $x = 17$

Answer: B

193) $4(2x - 2) = 7(x + 4)$

A) $x = 24$

B) $x = 36$

C) $x = -20$

D) $x = 20$

Answer: B

194) $5(x + 2) - (4x + 9) = 4$

A) $x = -3$

B) $x = -11$

C) $x = 5$

D) $x = 3$

Answer: D

Solve for x.

195) $-4(x + 2) - (-5x - 3) = 8$

A) $x = -13$

B) $x = 13$

C) $x = -3$

D) $x = 3$

Answer: B

196) $\frac{2}{5}x - \frac{1}{3}x = 3$

A) $x = 90$

B) $x = -90$

C) $x = -45$

D) $x = 45$

Answer: D

197) $\frac{3}{7}x + \frac{4}{9} = -\frac{4}{7}x - \frac{1}{2}$

A) $x = -\frac{1}{18}$

B) $x = \frac{17}{18}$

C) $x = -\frac{8}{17}$

D) $x = -\frac{17}{18}$

Answer: D

198) $\frac{3x + 2}{4} + \frac{3}{2} = -\frac{7x}{3}$

A) $x = -\frac{24}{37}$

B) $x = -\frac{12}{37}$

C) $x = \frac{24}{19}$

D) $x = \frac{12}{37}$

Answer: A

199) $\frac{1}{4}(x + 8) + \frac{1}{5}(x + 5) = x + 9$

A) $x = -\frac{240}{11}$

B) $x = -\frac{200}{11}$

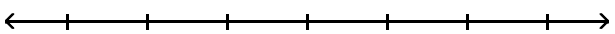
C) $x = -\frac{160}{11}$

D) $x = -\frac{120}{11}$

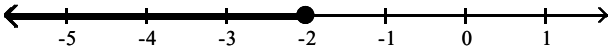
Answer: D

Solve and graph the inequality.

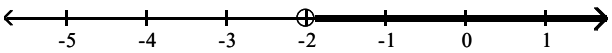
200) $-6(4x + 5) < -30x - 42$



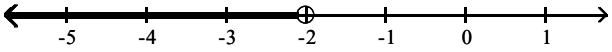
A) $x \leq -2$



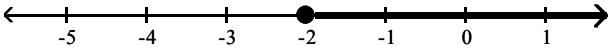
B) $x > -2$



C) $x < -2$

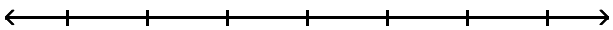


D) $x \geq -2$

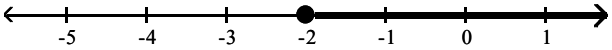


Answer: C

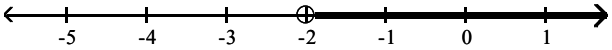
201) $30x + 15 - 5(5x + 1) \geq 0$



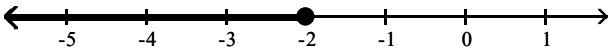
A) $x \geq -2$



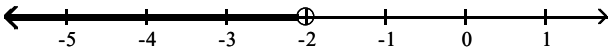
B) $x > -2$



C) $x \leq -2$

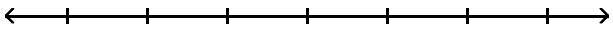


D) $x < -2$

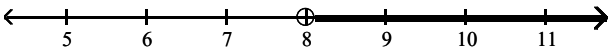


Answer: A

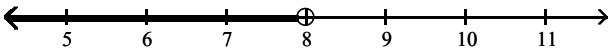
202) $-8x - 11 > -9x - 3$



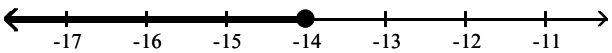
A) $x > 8$



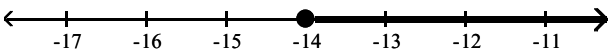
B) $x < 8$



C) $x \leq -14$

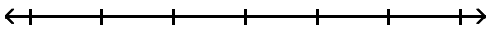


D) $x \geq -14$

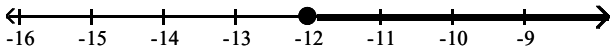


Answer: A

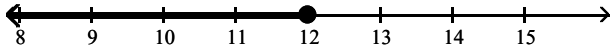
203) $\frac{1}{7}(x + 4) \leq \frac{2}{7}(x + 8)$



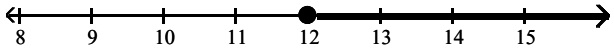
A) $x \geq -12$



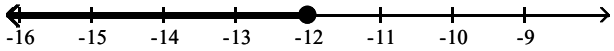
B) $x \leq 12$



C) $x \geq 12$



D) $x \leq -12$



Answer: A

Solve.

204) A number is doubled and then decreased by 13. The result is 61. What is the original number?

A) –24
B) 148
C) 24
D) 37

Answer: D

205) The sum of one–half a number, one–third of the number, and one–twelfth of the number is 44. Find the original number.

A) 40
B) 48
C) 53
D) 4

Answer: B

206) One number is 8 less than three times a second number. The sum of the two numbers is 16. Find each number.

A) 4 and 12
B) 6 and 4
C) 12 and 10
D) 6 and 10

Answer: D

207) Josh and Sam traveled in separate cars from their apartment to a ski resort 360 miles away. Sam wanted to get there early, so he traveled the maximum speed limit, 60 mph. Josh just bought a new car, so he drove a little slower at exactly 40 mph. If they both left at the same time, how much sooner did Sam arrive at the ski resort than Josh?

A) 1 hour sooner
B) 3 hours sooner
C) 2 hours sooner
D) they arrive at the same time

Answer: B

208) In a triangle, the measure of the first angle is four times the measure of the second angle. The measure of the third angle is 144 degrees more than the second angle. What is the measure of the first angle?

A) 54°
B) 6°
C) 150°
D) 24°

Answer: D

209) Gary has a budget of $1930 to rent a computer for his company office. The computer company he wants to rent from charges $250 for installation and service as a one–time fee. Then they charge $105 per month rental for the computer. How many months will Gary be able to rent a computer with this budget?

A) 18 months
B) 16 months
C) 14 months
D) 21 months

Answer: B

210) Last year the yearly tuition at State University went up 20%. This year's charge for tuition for the year is $91,200. What was it last year before the increase went into effect?

A) $18,240
B) $15,200
C) $91,200
D) $76,000

Answer: D

211) Charlotte invested $6000 in money market funds. Part was invested at 15% interest, the rest at 11% interest. At the end of each year the fund company pays interest. After one year she earned $764 in simple interest. How much was invested at each interest rate?

A) $2600 at 11%;
$3400 at 15%
B) $2600 at 15%;
$3400 at 11%
C) $2400 at 11%;
$3600 at 15%
D) $2400 at 15%;
$3600 at 11%

Answer: B

212) Nancy has $5.30 in change. She has three times as many nickels as quarters. She has two more quarters than dimes. How many coins of each type does he have?

A) 13 quarters, 11 dimes, 39 nickels
B) 11 quarters, 9 dimes, 33 nickels
C) 11 quarters, 13 dimes, 33 nickels
D) 33 quarters, 31 dimes, 11 nickels

Answer: B