

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

- 1) Is 4 a solution to the equation  $x + 7 = 11$ ? 1) \_\_\_\_\_  
A) No B) Yes
- 2) Is 17 a solution to the equation  $9 - x = 8$ ? 2) \_\_\_\_\_  
A) No B) Yes
- 3) Is -8 a solution to the equation  $8 - 6x = 56$ ? 3) \_\_\_\_\_  
A) Yes B) No
- 4) Is -4 a solution to the equation  $7x - 5 + 3x = 6 + x - 10$ ? 4) \_\_\_\_\_  
A) Yes B) No

**Label the following as an expression, a linear equation or an equation that is not linear.**

- 5)  $3x + 6 = 10$  5) \_\_\_\_\_  
A) Equation which is not linear  
B) Expression  
C) Linear equation
- 6)  $7x - 2$  6) \_\_\_\_\_  
A) Expression  
B) Equation which is not linear  
C) Linear equation
- 7)  $3x^2 - 5 = 0$  7) \_\_\_\_\_  
A) Linear equation  
B) Equation which is not linear  
C) Expression
- 8)  $\frac{3}{x} - 6 = 2x$  8) \_\_\_\_\_  
A) Linear equation  
B) Expression  
C) Equation which is not linear

**SHORT ANSWER.** Write the word or phrase that best completes each statement or answers the question.**Solve.**

- 9)  $x + 6 = 10$  9) \_\_\_\_\_

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

- 10)  $8x + 4 = 7x$  10) \_\_\_\_\_  
A) 3 B) -3 C) 4 D) -4

**SHORT ANSWER.** Write the word or phrase that best completes each statement or answers the question.

11)  $3x - 7 = 2x + 8$

11) \_\_\_\_\_

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

**Answer the question.**

12) Which of the following is equivalent to the equation  $6x - 11 = 5x - 2$ ?

12) \_\_\_\_\_

A)  $11x = 13$

B)  $x = -13$

C)  $6x = 5x - 13$

D)  $x - 11 = -2$

**Solve.**

13)  $8x - 0.94 = 7(x - 0.93)$

13) \_\_\_\_\_

A) -5.23

B) -5.57

C) -5.43

D) -5.78

**SHORT ANSWER.** Write the word or phrase that best completes each statement or answers the question.

14)  $24x - 2(7x - 0.965) = 9x + 0.075$

14) \_\_\_\_\_

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

15)  $4(7x + 10) = 3(9x - 5) + 20$

15) \_\_\_\_\_

A) -5

B) 5

C) 35

D) -35

**SHORT ANSWER.** Write the word or phrase that best completes each statement or answers the question.

**Write an English version of the following equation. Be sure that you write a complete sentence and that your sentence expresses the same idea as the equation.**

16)  $p + 5 = \frac{p}{3} - 10$

16) \_\_\_\_\_

**Solve.**

17)  $80 = 10x$

17) \_\_\_\_\_

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

18)  $-4x = 8$

18) \_\_\_\_\_

A) -2

B) 32

C) -32

D) 2

**SHORT ANSWER.** Write the word or phrase that best completes each statement or answers the question.

19)  $\frac{x}{4} = 1$

19) \_\_\_\_\_

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

20)  $\frac{2}{5}x = -10$

20) \_\_\_\_\_

A) -4

B) 4

C) -25

D) 25

**Answer the question.**

- 21) Upon returning to the U.S. from Canada, Burgette exchanged her remaining 150 Canadian Dollars for 134.53 U.S. Dollars. What exchange rate did she receive? [Hint: Use the equation  $150x = 134.53$  to solve this problem. Round to the nearest thousandth.] 21) \_\_\_\_\_
- A) 1.115 U.S. Dollars for each Canadian Dollar  
B) 0.896 U.S. Dollars for each Canadian Dollar  
C) 1.114 U.S. Dollars for each Canadian Dollar  
D) 0.897 U.S. Dollars for each Canadian Dollar

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

**Solve.**

- 22)  $8.4x = -25.2$  22) \_\_\_\_\_

**Answer the question.**

- 23) A company estimates that 5% of the parts they manufacture are defective. If 3 defective parts are found one week by the quality assurance testers, how many parts were manufactured that week? 23) \_\_\_\_\_
- 24) What interest will you pay on a \$5400 loan for 1 year if the interest rate is 8%? 24) \_\_\_\_\_

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

- 25) Joe was charged \$54 interest for 1 month on a \$600 credit card balance. What was the monthly interest rate? 25) \_\_\_\_\_
- A) 9%                      B) 8.5%                      C) 9.5%                      D) 10%

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

- 26) An 800 g solution of acid and water contains 128 g of acid. What percent of the solution is acid? 26) \_\_\_\_\_
- 27) If the sales tax rate is 2% and the tax on a purchase is \$16, what was the amount of the purchase? 27) \_\_\_\_\_
- 28) A real estate agent received a 5.5% commission on the sale of a home. If the home sold for \$181,000, how much was his commission? 28) \_\_\_\_\_
- 29) Of 50 students in a class, 47 passed. What percentage of the students passed? 29) \_\_\_\_\_
- 30) Enrique puts 12% of his monthly paycheck in an IRA. If he invests \$72 in his IRA, how much was his paycheck? 30) \_\_\_\_\_

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

- 31) A furniture store marks up items 20% (based on cost). If the furniture store buys a couch for \$350, what will the selling price be? 31) \_\_\_\_\_  
A) \$430 B) \$410 C) \$420 D) \$440
- 32) A home purchased for \$300,000 depreciated 8% over a 1-year period. What was the value of the home after at the end of the year? 32) \_\_\_\_\_  
A) \$272,000 B) \$276,000 C) \$274,000 D) \$278,000
- 33) A pair of earrings was marked up \$50 from cost, which amounts to a 20% increase. Find the original cost of the pair of earrings. 33) \_\_\_\_\_  
A) \$255 B) \$265 C) \$250 D) \$260

**Solve.**

- 34)  $4x + 20 = 8$  34) \_\_\_\_\_  
A) 7 B) -3 C) -18 D) 22
- 35)  $28 - 7x = 21$  35) \_\_\_\_\_  
A) 25 B) -7 C) -31 D) 1
- 36)  $\frac{x}{8} - 4 = 10$  36) \_\_\_\_\_  
A) 112 B) -112 C) 84 D) -84
- 37)  $\frac{2}{5}x - 6 = 12$  37) \_\_\_\_\_  
A) 45 B) 36 C)  $\frac{54}{5}$  D)  $\frac{36}{5}$

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

- 38)  $8x - 11 = 2x + 1$  38) \_\_\_\_\_
- 39)  $10x - 4 - 5x = 6 + 3x - 8$  39) \_\_\_\_\_
- 40)  $5(x - 1) = 25$  40) \_\_\_\_\_

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

- 41)  $-3(x + 1) = 2(x - 8) + 3$  41) \_\_\_\_\_  
A) -1 B) 1 C) 2 D) 3

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

- 42)  $-2(x + 3) + 7x = 8x - 3$  42) \_\_\_\_\_

$$43) -9(x + 2) + 10x = x - 18$$

43) \_\_\_\_\_

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

$$44) -3x - 7 + 10x = 7x - 7$$

44) \_\_\_\_\_

A) 0

B) No solution

C) 1

D) Identity

$$45) 3(x - 2) - 2x = x - 6$$

45) \_\_\_\_\_

A) No solution

B) 1

C) Identity

D) 0

**SHORT ANSWER.** Write the word or phrase that best completes each statement or answers the question.

$$46) -6(x + 3) - 10 = 3(-2x - 5) - 13$$

46) \_\_\_\_\_

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

$$47) 4(x + 2) - 3x = x - 6$$

47) \_\_\_\_\_

A) Identity

B) No solution

C) 0

D) 1

**SHORT ANSWER.** Write the word or phrase that best completes each statement or answers the question.

$$48) -10(x - 4) + 11x = x + 9$$

48) \_\_\_\_\_

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

$$49) 7x - 1 + 9x = 16x - 6$$

49) \_\_\_\_\_

A) No solution

B) Identity

C) 1

D) 0

**SHORT ANSWER.** Write the word or phrase that best completes each statement or answers the question.

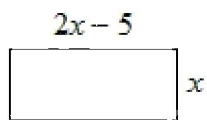
$$50) 10(-x - 7) + 20 = -5(2x + 4)$$

50) \_\_\_\_\_

**Solve the problem.**

51) Find the length of each side of the rectangle for the given perimeter.

51) \_\_\_\_\_



$$P = 50 \text{ in.}$$

**Solve.**

$$52) 6x + 4(3x - 2) = 6x + 2$$

52) \_\_\_\_\_

$$53) \frac{9}{7}x - 9 = \frac{2}{7}x - 4$$

53) \_\_\_\_\_

$$54) \frac{2}{7}x - \frac{3}{2}x = \frac{3}{14}$$

54) \_\_\_\_\_

**Solve the literal equation for  $w$ .**

$$55) v = 11w$$

55) \_\_\_\_\_

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

**Solve the literal equation for  $b$ .**

$$56) a = \frac{1}{2}bc^2$$

56) \_\_\_\_\_

A)  $2a - c^2$

B)  $\frac{2a}{c^2}$

C)  $\frac{a - c^2}{2}$

D)  $\frac{a}{2c^2}$

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

**Solve the literal equation for  $y$ .**

$$57) x + 4y = 20$$

57) \_\_\_\_\_

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

**Solve the literal equation for  $x$ .**

$$58) 3x - 2y = 6$$

58) \_\_\_\_\_

A)  $\frac{2y + 6}{3}$

B)  $\frac{2}{3}y + 6$

C)  $\frac{3x - 6}{2}$

D)  $2 + 2y$

**Solve the problem.**

59) A rectangular solid has a base with length 2 cm and width 6 cm. If the volume of the solid is  $60 \text{ cm}^3$ , find the height of the solid. [Hint: The volume of a rectangular solid is given by  $V = LWH$ .]

59) \_\_\_\_\_

A) 6 cm

B) 7 cm

C) 4 cm

D) 5 cm

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

60) A cylinder has a radius of 5 in. If the volume of the cylinder is  $250\pi \text{ in.}^3$ , what is the height of the cylinder? [Hint: The volume of a cylinder is given by  $V = \pi r^2 h$ .]

60) \_\_\_\_\_

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

61) A principal of \$5000 was invested in a savings account for 4 years. If the interest earned for the period was \$400, what was the interest rate? [Hint: The formula for simple interest is  $I = Prt$ .]

61) \_\_\_\_\_

A) 1.5%

B) 1%

C) 2.5%

D) 2%

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

- 62) If the perimeter of a rectangle is 18 ft and the width is 7 ft, find its length. [Hint: 62) \_\_\_\_\_  
The perimeter of a rectangle is given by  $P = 2L + 2W$ .]

**Translate the following statement into an algebraic equation. Let  $x$  represent the number.**

- 63) 5 less than a number is 4 63) \_\_\_\_\_  
64) 7 more than 4 times a number is 8 times that same number. 64) \_\_\_\_\_

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

- 65) 12 less than 5 times a number is 18. 65) \_\_\_\_\_  
A)  $12 - 5x = 18$  B)  $5x - 12 = 18$  C)  $(5 - 12)x = 18$  D)  $(12 - 5)x = 18$   
66) 6 times a number is 14 more than that number. 66) \_\_\_\_\_  
A)  $6x = 14x$  B)  $6x + 14 = x$  C)  $6x = x + 14$  D)  $6 = 14x + x$

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

**Solve the problem.**

- 67) The sum of a number and -10 is 3. Find the number. 67) \_\_\_\_\_  
68) 3 times a number, increased by 2, is 29. Find the number. 68) \_\_\_\_\_  
69) The sum of three consecutive odd integers is 201. Find the integers. 69) \_\_\_\_\_

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

- 70) Ricardo is 4 years less than twice as old as his sister. The sum of their ages is 20. How 70) \_\_\_\_\_  
old is Ricardo?  
A) 14 B) 10 C) 12 D) 8

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

- 71) One number is 4 less than another. If 6 times the smaller number minus 2 times 71) \_\_\_\_\_  
the larger number is 8, find the two numbers.  
72) Find two consecutive integers such that the sum of 5 times the first integer and 3 72) \_\_\_\_\_  
times second integer is 51. [Hint: If  $x$  represents the first integer,  $x + 1$  represents  
the next consecutive integer.]  
73) Find two consecutive odd integers such that 5 times the first integer is 12 more 73) \_\_\_\_\_  
than 3 times the second.  
74) The length of a rectangle is 2 cm more than twice its width. If the perimeter of 74) \_\_\_\_\_  
the rectangle is 40 cm, find the dimensions of the rectangle.

75) The length of a rectangular garden is 9 ft less than 4 times its width. If the perimeter of the garden is 32 ft, find the dimensions of the garden. 75) \_\_\_\_\_

76) The base of an isosceles triangle is 1 in. less than the length of one of the equal sides. If the perimeter of the triangle is 23 in., find the length of each of the sides. 76) \_\_\_\_\_

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

77) The length of one of the equal legs of an isosceles triangle is 8 cm less than 4 times the length of the base. If the perimeter is 29 cm, find the length of one of the equal legs. 77) \_\_\_\_\_  
A) 11 cm                      B) 4 cm                      C) 5 cm                      D) 12 cm

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

78) Tickets for a play at the community theater cost \$20 for an adult and \$8 for a child. If 250 tickets were sold and the total receipts were \$3800, how many of each type of ticket were sold? 78) \_\_\_\_\_

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

79) Allen bought 20 stamps at the post office in 37¢ and 20¢ denominations. If the total cost of the stamps was \$7.06, how many 37¢ stamps did Allen buy? 79) \_\_\_\_\_  
A) 15                      B) 18                      C) 16                      D) 17

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

80) Anna has 12 bills in her wallet, some \$5 and some \$10. The total value of the bills is \$100. How many of each bill does Anna have? 80) \_\_\_\_\_

81) Tickets for an event cost \$1 for children, \$10 for adults, and \$4 for senior citizens. The total ticket sales were \$1850. There were 50 more adult tickets sold than child tickets, and the number of senior citizens tickets were 4 times the number of child tickets. How many of each ticket were sold? 81) \_\_\_\_\_

82) A consultant traveled 8 hours to attend a meeting. The return trip took only 7 hours because the speed was 8 miles per hour faster. What was the consultant's speed each way? 82) \_\_\_\_\_

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

83) At 1:00 p.m., a car leaves a city and travels north at a rate of 55 mi/h. An hour later, a second car leaves the city and travels south at a rate of 60 mi/hr. At what time will the two cars be 285 miles apart? 83) \_\_\_\_\_  
A) 3:00 p.m.                      B) 4:00 p.m.                      C) 2:00 p.m.                      D) 5:00 p.m.



- 84) At 9:00 a.m. a truck leaves the truck yard and travels west at a rate of 35 mi/hr. Two hours later, a second truck leaves along the same route, traveling at 45 mi/hr. When will the second truck catch up to the first? 84) \_\_\_\_\_
- A) 6:00 p.m. B) 7:00 p.m. C) 8:00 p.m. D) 9:00 p.m.

**SHORT ANSWER.** Write the word or phrase that best completes each statement or answers the question.

- 85) Ching leaves San Francisco and travels toward Los Angeles at 50 mi/h. An hour later, Phil leaves Los Angeles and travels toward San Francisco at 60 mi/h. If the two cities are 380 miles apart, how many hours will it take for Ching to meet Phil? 85) \_\_\_\_\_

**Complete the statement, using the symbol  $<$  or  $>$ .**

- 86)  $1$  \_\_\_\_\_  $-13$  86) \_\_\_\_\_
- 87)  $4$  \_\_\_\_\_  $-5$  87) \_\_\_\_\_

**Write the inequality in words.**

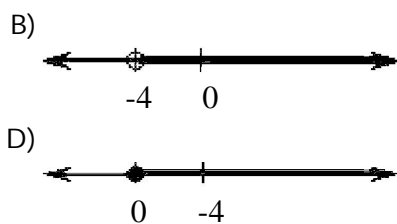
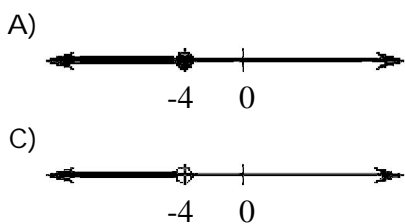
- 88)  $x > 12$  88) \_\_\_\_\_
- 89)  $x \geq 2$  89) \_\_\_\_\_

**Graph the solution set of the inequality.**

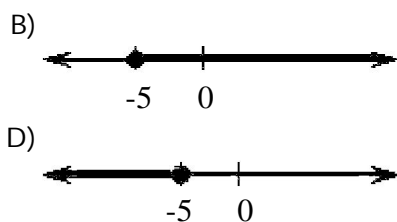
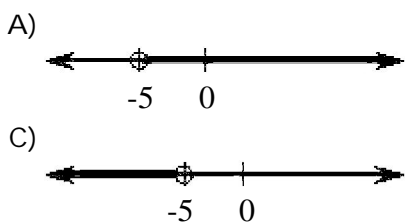
- 90)  $x > 5$ . 90) \_\_\_\_\_

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

- 91)  $x < -4$ . 91) \_\_\_\_\_



- 92)  $x \geq -5$ . 92) \_\_\_\_\_



**SHORT ANSWER.** Write the word or phrase that best completes each statement or answers the question.

- 93)  $x \leq 3$ . 93) \_\_\_\_\_

**Solve and graph the solution set.**

94)  $x + 4 > -3$

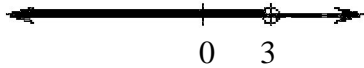
94) \_\_\_\_\_

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

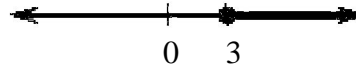
95)  $3x + 6 \geq 2x + 9$

95) \_\_\_\_\_

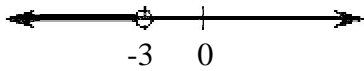
A)



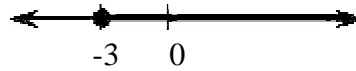
B)



C)



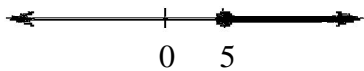
D)



96)  $3x \geq 7x + 20$

96) \_\_\_\_\_

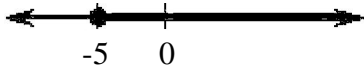
A)



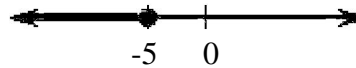
B)



C)



D)



**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

97)  $3(x - 4) > 7x - 9$

97) \_\_\_\_\_

**Solve the literal equation for y.**

98) A electronics store wants to order at least 3 times as many DVD players as Blu-ray players. Write an inequality expressing this relationship.

98) \_\_\_\_\_

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

99) An arithmetic student needs an average of 70 or more to receive credit for the course. She scored 66, 60, and 82 on the first three exams. Write a simplified inequality representing the score she must get on the last test to receive credit for the course.

99) \_\_\_\_\_

A)  $x \geq 70$

B)  $x \geq 74$

C)  $x \geq 72$

D)  $x \geq 77$

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

100) A long-distance phone call costs \$0.61 for the first minute and \$0.15 for each additional minute or portion thereof. Write an inequality representing the number of minutes a person could talk without exceeding \$2.

100) \_\_\_\_\_

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

101) The perimeter of a rectangle is to be no greater than 300 in., and the length must be 125 in. Find the maximum width of the rectangle.

101) \_\_\_\_\_

A) 20 in.

B) 175 in.

C) 25 in.

D) 50 in.

**SHORT ANSWER.** Write the word or phrase that best completes each statement or answers the question.

**Translate the following statement into an algebraic equation. Let  $x$  represent the number.**

102) 10 more than a number is less than 2

102) \_\_\_\_\_

## Answer Key

Testname: UNTITLED3

- 1) B
- 2) A
- 3) A
- 4) B
- 5) C
- 6) A
- 7) B
- 8) C
- 9) 4
- 10) D
- 11) 15
- 12) D
- 13) B
- 14) -1.855
- 15) D
- 16) A number increased by five is ten less than one-third of the number. [Answers may vary.]
- 17) 8
- 18) A
- 19) 4
- 20) C
- 21) D
- 22) -3
- 23) 60 parts
- 24) \$432
- 25) A
- 26) 16%
- 27) \$800
- 28) \$9955
- 29) 94%
- 30) \$600
- 31) C
- 32) B
- 33) C
- 34) B
- 35) D
- 36) A
- 37) A
- 38) 2
- 39) 1
- 40) 6
- 41) C
- 42) -1
- 43) Identity
- 44) D
- 45) C
- 46) Identity
- 47) B

## Answer Key

Testname: UNTITLED3

- 48) No solution
- 49) A
- 50) No solution
- 51) 10 in., 15 in.
- 52)  $\frac{5}{6}$
- 53) 5
- 54)  $-\frac{3}{17}$
- 55)  $\frac{v}{11}$
- 56) B
- 57)  $\frac{20-x}{4}$  or  $-\frac{1}{4}x + 5$
- 58) A
- 59) D
- 60) 10 in.
- 61) D
- 62) 2 ft
- 63)  $x - 5 = 4$
- 64)  $4x + 7 = 8x$
- 65) B
- 66) C
- 67) 13
- 68) 9
- 69) 65, 67, 69
- 70) C
- 71) 4, 8
- 72) 6, 7
- 73) 9, 11
- 74) 6 cm, 14 cm
- 75) 5 ft, 11 ft
- 76) Legs, 8 in.; base, 7 in.
- 77) D
- 78) 150 adult tickets, 100 child tickets.
- 79) B
- 80) 4 \$5 bills, 8 \$10 bills
- 81) 50 child tickets, 100 adult tickets, 200 senior citizen tickets
- 82) 56 mi/h, 64 mi/hr
- 83) B
- 84) A
- 85) 4 hours after Ching leaves
- 86)  $>$
- 87)  $>$

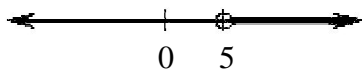
Answer Key

Testname: UNTITLED3

88)  $x$  is greater than 12

89)  $x$  is greater than or equal to 2

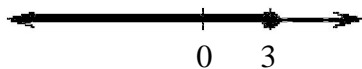
90)



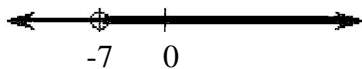
91) C

92) B

93)



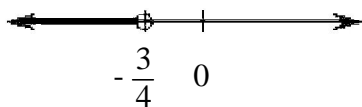
94)



95) B

96) D

97)



98)  $D \geq 3B$

99) C

100)  $0.61 + 0.15(t - 1) \leq 2$

101) C

102)  $x + 10 < 2$