

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

**Name the indicated property.**

- |  |                            |                            |          |
|--|----------------------------|----------------------------|----------|
| 1) If $x = 5$ , then $5 = x$ .                             | A) reflexive property      | B) symmetric property      | 1) _____ |
|  | C) multiplication property | D) transitive property     |          |
| 2) If $x = -5$ and $-5 = y$ , then $x = y$ .               | A) transitive property     | B) multiplication property | 2) _____ |
|  | C) reflexive property      | D) symmetric property      |          |
| 3) $5x + 21 = 5x + 21$                                     | A) transitive property     | B) addition property       | 3) _____ |
|  | C) symmetric property      | D) reflexive property      |          |
| 4) If $x = -6$ , then $x + 3 = -6 + 3$                     | A) transitive property     | B) symmetric property      | 4) _____ |
|  | C) reflexive property      | D) addition property       |          |
| 5) If $x + 7 = -5$ , then $x + 7 - 7 = -5 - 7$             | A) symmetric property      | B) reflexive property      | 5) _____ |
|  | C) transitive property     | D) addition property       |          |
| 6) If $x = 2$ , then $x - 2 = 2 - 2$                       | A) transitive property     | B) reflexive property      | 6) _____ |
|  | C) addition property       | D) symmetric property      |          |
| 7) If $x + 3 = y + 1$ , and $y + 1 = z$ , then $x + 3 = z$ | A) addition property       | B) symmetric property      | 7) _____ |
|  | C) transitive property     | D) reflexive property      |          |
| 8) If $7x = -2$ , then $5(7x) = 5(-2)$                     | A) reflexive property      | B) multiplication property | 8) _____ |
|  | C) symmetric property      | D) transitive property     |          |
| 9) $5x = 14$ , then $\frac{1}{5}(5x) = \frac{1}{5}(14)$    | A) reflexive property      | B) multiplication property | 9) _____ |
|  | C) transitive property     | D) symmetric property      |          |

**Give the degree of the term.**

- |             |       |       |        |       |           |
|-------------|-------|-------|--------|-------|-----------|
| 10) $-3x$   | A) 1  | B) -1 | C) 0   | D) -3 | 10) _____ |
| 11) $-9x^6$ | A) -9 | B) 54 | C) -54 | D) 6  | 11) _____ |
| 12) $3xy$   | A) 3  | B) 0  | C) 1   | D) 2  | 12) _____ |

- 13) 4  
A) 4                      B) -4                      C) 1                      D) 0                      13) \_\_\_\_\_
- 14) -4  
A) 1                      B) 4                      C) 0                      D) -4                      14) \_\_\_\_\_
- 15)  $5g^5b^5c^6$   
A) 6                      B) 5                      C) 16                      D) 11                      15) \_\_\_\_\_
- 16)  $2g^2c^3$   
A) 5                      B) 2                      C) 7                      D) 3                      16) \_\_\_\_\_
- 17)  $3xy^8z^6$   
A) 15                      B) 48                      C) 14                      D) 3                      17) \_\_\_\_\_
- 18)  $21x^3y$   
A) 7                      B) 4                      C) 21                      D) 3                      18) \_\_\_\_\_

**Simplify the expression. If the expression cannot be simplified, so state.**

- 19)  $6a - 2a + 4$   
A)  $-4a + 4$                       B)  $4a + 4$   
C)  $8a + 4$                       D) cannot be simplified                      19) \_\_\_\_\_
- 20)  $-11y - 4x - 7x$   
A)  $-11y + 3x$                       B)  $-22xy$                       C)  $-11y - 3x$                       D)  $-11y - 11x$                       20) \_\_\_\_\_
- 21)  $-6y - 4y^2$   
A)  $-2y$                       B)  $-10y^2$   
C)  $-10y$                       D) cannot be simplified                      21) \_\_\_\_\_
- 22)  $-7y + 2 - 7 + 6 + y - 1$   
A)  $-8y + 1$                       B)  $-6y$                       C)  $-6y - 1$                       D)  $-8y$                       22) \_\_\_\_\_
- 23)  $13x^9 - 2x^9$   
A)  $10x^9$                       B)  $11x^{81}$                       C)  $11x^{18}$                       D)  $11x^9$                       23) \_\_\_\_\_
- 24)  $1.4x^7 + 0.6x^7 + 0.6x^7$   
A)  $6x^7$                       B)  $2.6x^7$   
C)  $4x^7$                       D) cannot be simplified                      24) \_\_\_\_\_
- 25)  $-6y^2 - 9y^2$   
A)  $-15y^4$                       B)  $-15y^2$   
C)  $3y^2$                       D) cannot be simplified                      25) \_\_\_\_\_
- 26)  $7x + 8 - 2x + 2$   
A)  $15x$                       B)  $5x + 10$                       C)  $9x + 10$                       D)  $5x + 6$                       26) \_\_\_\_\_

- 27)  $5.6k - 1.7 - 3.6k + 3 + 2.5k$  27) \_\_\_\_\_  
 A)  $11.7k + 1.3$  B)  $4.5k - 1.3$  C)  $4.5k + 1.3$  D)  $4.5k + 4.7$
- 28)  $-4(7r + 2) + 3(5r + 10)$  28) \_\_\_\_\_  
 A)  $-13r + 2$  B)  $3r - 2$  C)  $-36r$  D)  $-13r + 22$
- 29)  $-2 + 9(2 - 7m)$  29) \_\_\_\_\_  
 A)  $18 - 63m$  B)  $16 - 7m$  C)  $16 + 63m$  D)  $16 - 63m$
- 30)  $4(y + 9) - 6$  30) \_\_\_\_\_  
 A)  $4y + 30$  B)  $4y + 3$  C)  $13y - 6$  D)  $4y + 12$
- 31)  $(12z + 12) - (2z - 11)$  31) \_\_\_\_\_  
 A)  $14z + 23$  B)  $10z + 1$  C)  $10z + 23$  D)  $10z - 23$
- 32)  $-5(2x - 7) - 4x + 5$  32) \_\_\_\_\_  
 A)  $14x + 40$  B)  $-14x + 40$  C)  $6x + 40$  D)  $-14x - 30$
- 33)  $7[9x^2 + 3(-5 - x)]$  33) \_\_\_\_\_  
 A)  $63x^2 + 21x - 105$  B)  $63x^2 - 21x - 105$   
 C)  $63x^2 - 7x - 105$  D)  $63x^2 - 3x - 15$
- 34)  $-[4x^2 - (-5x^2 + 2)] - [(5x^2 + (4 + 9x^2)) + 7x^2]$  34) \_\_\_\_\_  
 A)  $-2x^2 + 6$  B)  $-2x^2 + 2$  C)  $-30x^2 - 2$  D)  $12x^2 + 6$
- 35)  $8\{6y^2 + 9[4y^2 - (y + z^2)]\}$  35) \_\_\_\_\_  
 A)  $264y^2 - 72y$  B)  $336y^2 - 72y - 72z^2$   
 C)  $336y^2 - 8y + 8z^2$  D)  $84y^2 - 9y - 9z^2$
- 36)  $2x^4y^3 + 2(4x^4y^3 - 8x^3y^4)$  36) \_\_\_\_\_  
 A)  $-6x^7y^7$  B)  $10x^4y^3 - 8x^3y^4$   
 C)  $10x^4y^3 - 16x^3y^4$  D) cannot be simplified
- 37)  $r^2s + 4rs - [-(rs + 4r^2s) + rs]$  37) \_\_\_\_\_  
 A)  $4r^2s + 2rs$  B)  $9r^3s^2$  C)  $-3r^2s + 6rs$  D)  $5r^2s + 4rs$
- Solve the equation.**
- 38)  $10n - 7 = 83$  38) \_\_\_\_\_  
 A) 15 B) 9 C) 84 D) 80
- 39)  $-8y - 7 = 8 - 2y$  39) \_\_\_\_\_  
 A)  $\frac{2}{5}$  B) -10 C)  $-\frac{5}{2}$  D)  $-\frac{2}{5}$

- 40)  $8x - (2x - 1) = 2$  40) \_\_\_\_\_  
 A)  $\frac{1}{6}$  B)  $\frac{1}{10}$  C)  $-\frac{1}{10}$  D)  $-\frac{1}{6}$
- 41)  $4(x + 7) = 5(x - 7)$  41) \_\_\_\_\_  
 A) 7 B) -7 C) -63 D) 63
- 42)  $3(2x - 2) = 5(x + 4)$  42) \_\_\_\_\_  
 A) 17 B) 26 C) -14 D) 14
- 43)  $9(x - 3) - (8x + 6) = -6$  43) \_\_\_\_\_  
 A) -39 B) 27 C) -3 D) -27
- 44)  $4x + 3(2x - 4) = 5 - 7x$  44) \_\_\_\_\_  
 A)  $-\frac{7}{3}$  B)  $-\frac{7}{17}$  C) -1 D) 1
- 45)  $8y + 4(8 + y) = 3(y - 5) + 10y$  45) \_\_\_\_\_  
 A) -13 B) 47 C) 13 D) -47
- 46)  $3[6x - 1 + 3(x + 1)] = -3x - 2$  46) \_\_\_\_\_  
 A)  $-\frac{7}{15}$  B)  $-\frac{4}{3}$  C)  $-\frac{4}{15}$  D)  $-\frac{7}{3}$
- 47)  $2\{2 - [5(k + 6) - 4(k + 6)]\} = -3k$  47) \_\_\_\_\_  
 A) 8 B)  $-\frac{9}{4}$  C) 1 D)  $\frac{4}{3}$
- 48)  $-\{5(d + 2) - 6[3d - 2(3d + 8)] - 7\} = -18d + 81$  48) \_\_\_\_\_  
 A)  $\frac{25}{4}$  B) 41 C)  $\frac{180}{41}$  D) -36
- 49)  $\frac{f}{4} - 4 = 1$  49) \_\_\_\_\_  
 A) 20 B) 12 C) -20 D) -12
- 50)  $\frac{1}{2}(a - 1) = -2$  50) \_\_\_\_\_  
 A) 5 B) 3 C) -5 D) -3
- 51)  $\frac{1}{3}(r + 6) = \frac{1}{6}(r + 8)$  51) \_\_\_\_\_  
 A) 4 B) -4 C) 36 D) 6
- 52)  $\frac{2}{5}x - \frac{1}{3}x = 4$  52) \_\_\_\_\_  
 A) 120 B) 60 C) -60 D) -120

- 53)  $\frac{1}{20}b - 6 = -4$  53) \_\_\_\_\_  
 A) 40 B) -40 C) -42 D) 42
- 54)  $\frac{4}{3}(7 - x) = x$  54) \_\_\_\_\_  
 A)  $\frac{28}{5}$  B) 4 C) 7 D) -4
- 55)  $\frac{3}{5}(y - 2) = 1 - 3y$  55) \_\_\_\_\_  
 A)  $\frac{11}{6}$  B)  $\frac{7}{6}$  C)  $-\frac{11}{18}$  D)  $\frac{11}{18}$
- 56)  $24.5 = -11.7 - n$  56) \_\_\_\_\_  
 A) 12.8 B) -36.2 C) -12.8 D) 36.2
- 57)  $1.5x - 2.7 = 0.7x + 2.58$  57) \_\_\_\_\_  
 A) 5.94 B) 6.6 C) 6.5 D) -0.152
- 58)  $0.80x - 0.70(50 + x) = -0.60(50)$  58) \_\_\_\_\_  
 A) 40 B) 25 C) 60 D) 50
- 59)  $-0.01y + 0.12(200 - y) = 0.12y$  59) \_\_\_\_\_  
 A) 60 B) 6 C) 192 D) 96
- 60)  $0.8(12x - 3000) = -0.4(20x + 6000) + 19.2x$  60) \_\_\_\_\_  
 A) 1 B) 0 C) -1500.00 D) 0.625

**Indicate whether the equation is conditional, an identity, or a contradiction.**

- 61)  $5(3x - 21) = 15x - 105$  61) \_\_\_\_\_  
 A) conditional B) contradiction C) identity
- 62)  $7x = 7x$  62) \_\_\_\_\_  
 A) contradiction B) conditional C) identity
- 63)  $3x + 24 = 3(x + 8) + 5$  63) \_\_\_\_\_  
 A) identity B) contradiction C) conditional
- 64)  $7x + 9x = 15x$  64) \_\_\_\_\_  
 A) contradiction B) conditional C) identity

**Solve the problem.**

- 65) A solution is being heated in a controlled lab environment. The temperature of the solution is estimated by the equation  $T = 8x + 6$  where T is the temperature of the solution and x is the time in minutes starting with when the solution was subjected to the heat. What will be the temperature of the solution when x = 9 minutes? 65) \_\_\_\_\_  
 A) 78 B) 66 C) 14 D) 126

- 66) The average price (in dollars) to rent a studio in a certain city can be approximated by the equation  $p = 33.1t + 560$  where  $t$  is the number of years since 1990. Solve this equation for  $t$  and use the new equation to determine approximately what year it will be when the average price of a studio in this city reaches \$1354.40. 66) \_\_\_\_\_
- A) 2017                      B) 2014                      C) 2016                      D) 2015

**Solve the equation for the specified symbol.**

- 67)  $V = \frac{B\odot}{q}$  for  $\odot$  67) \_\_\_\_\_
- A)  $\odot = \frac{qV}{B}$                       B)  $\odot = \frac{B}{qV}$                       C)  $\odot = \frac{qB}{V}$                       D)  $\odot = \frac{V}{qB}$

- 68)  $\Delta = \frac{q(\odot)}{\alpha} + \square$  for  $\odot$  68) \_\_\_\_\_
- A)  $\odot = \frac{\Delta - \square}{q}$                       B)  $\odot = \frac{q(\Delta - \square)}{\alpha}$                       C)  $\odot = \frac{\alpha}{\Delta - \square}$                       D)  $\odot = \frac{\alpha(\Delta - \square)}{q}$

**Solve the problem.**

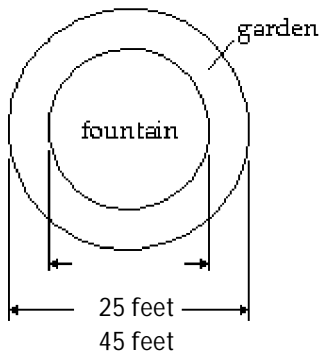
- 69) Mr. Brown just fenced in an area for his dog. He used exactly 52 feet of fencing for the rectangular shaped enclosure. If the length of the enclosure is 17 feet, what is its width? The formula for the perimeter of a rectangle is  $P = 2l + 2w$ . 69) \_\_\_\_\_
- A) 18 ft                      B)  $3\frac{1}{17}$  ft                      C) 9 ft                      D) 43 ft

- 70) Josh makes a \$2000, 5% simple interest personal loan to his friend Sean for a period of 7 years. When Sean settles his loan at the end of the 7 years, how much money, in total, must he pay Josh? The formula for simple interest is  $I = prt$ . 70) \_\_\_\_\_
- A) \$2035                      B) \$2700                      C) \$700                      D) \$72,000

- 71) A family is preparing an area in their yard for playground equipment. They have marked an area that is 12 feet by 16 feet. They want to fill the area with wood chips to a depth of 4 inches. Find the volume of wood chips required in cubic feet. 71) \_\_\_\_\_
- A) 576 cubic ft                      B) 64 cubic ft                      C) 32 cubic ft                      D) 768 cubic ft

- 72) In Little City Park there is a circular fountain. The park district has decided to plant a circular garden around the fountain. In order to purchase the appropriate number of plants, they must determine the area of the garden in square feet. Find the area rounded to two decimal places, if necessary. The formula for the area of a circle is  $A = \pi r^2$ . Use 3.14 as an approximation for  $\pi$ .

72) \_\_\_\_\_



- A) 4396 sq ft                      B) 2198 sq ft                      C) 3450.86 sq ft                      D) 1099 sq ft
- 73) Find the total cost of tiling a rectangular floor that is 10 meters long and 3 meters wide if it costs \$4.42 to tile one square meter. Round to the nearest cent. The formula for the area of a rectangle is  $A = lw$ .

73) \_\_\_\_\_

- A) \$132.60                      B) \$114.92                      C) \$57.46                      D) \$30.00

- 74) A canvas for a mural is in the shape of a right triangle. Before the mural can be painted, the canvas must be varnished. The base of the mural is 5 meters and the height of the mural is 13 meters. How many cans of varnish will you need if each can covers 10 square meters? The formula for the area of a right triangle is  $A = \frac{1}{2}bh$ .

74) \_\_\_\_\_

- A) 33 cans of varnish                      B) 13 cans of varnish  
C) 7 cans of varnish                      D) 4 cans of varnish

- 75) Find the amount in a savings account at the end of 3 years if the amount originally deposited (the principal) is \$4000 and the interest rate is 5% compounded semiannually.

75) \_\_\_\_\_

The formula for the final amount is  $A = P\left(1 + \frac{r}{n}\right)^{nt}$ .

- A) \$4307.56                      B) \$5102.65                      C) \$24,600.00                      D) \$4638.77

**Evaluate the formula for the values given.**

- 76)  $P = 2L + 2W$  when  $L = 8$  and  $W = 5$

76) \_\_\_\_\_

- A)  $P = 80$                       B)  $P = 21$                       C)  $P = 26$                       D)  $P = 13$

- 77)  $A = \frac{1}{2}bh$  when  $b = 4$  and  $h = 9$

77) \_\_\_\_\_

- A)  $A = 13\frac{1}{2}$                       B)  $A = 36$                       C)  $A = 13$                       D)  $A = 18$

- 78)  $d = rt$  when  $r = 8$  and  $t = 5$

78) \_\_\_\_\_

- A)  $d = 0.2$                       B)  $d = 48$                       C)  $d = 32$                       D)  $d = 40$

79)  $L = \frac{P - 2W}{2}$  when  $P = 16$  and  $W = 6$  79) \_\_\_\_\_

- A)  $L = 5$                       B)  $L = 2$                       C)  $L = 8$                       D)  $L = 10$

80)  $B = \frac{3V}{h}$  when  $V = 36$  and  $h = 6$  80) \_\_\_\_\_

- A)  $B = 18$                       B)  $B = 6$                       C)  $B = 42$                       D)  $B = 216$

81)  $t = \frac{I}{pr}$  when  $I = 64.40$ ,  $p = 230.00$ , and  $r = 0.07$  81) \_\_\_\_\_

- A)  $t = 1036.84$                       B)  $t = 10.3684$                       C)  $t = 0.4$                       D)  $t = 4$

82)  $h = \frac{2A}{b + B}$  when  $A = 87$ ,  $b = 12$ , and  $B = 17$  82) \_\_\_\_\_

- A)  $h = 6$                       B)  $h = 72\frac{1}{2}$                       C)  $h = 204$                       D)  $h = 14\frac{1}{2}$

**Solve the equation for y.**

83)  $x = 8y + 9$  83) \_\_\_\_\_

- A)  $y = x - \frac{9}{8}$                       B)  $y = 8x - 9$                       C)  $y = \frac{1}{8}x - 9$                       D)  $y = \frac{1}{8}x - \frac{9}{8}$

84)  $2x - 9y = 5$  84) \_\_\_\_\_

- A)  $y = \frac{2}{9}x - \frac{5}{9}$                       B)  $y = \frac{9}{2}x + \frac{5}{2}$                       C)  $y = \frac{2}{9}x + \frac{5}{9}$                       D)  $y = 2x - 5$

85)  $2x + 7y = 18$  85) \_\_\_\_\_

- A)  $y = 2x - 18$                       B)  $y = -\frac{2}{7}x + \frac{18}{7}$                       C)  $y = \frac{2}{7}x - \frac{18}{7}$                       D)  $y = \frac{2}{7}x + \frac{18}{7}$

86)  $4x + 7y = 8x + 9$  86) \_\_\_\_\_

- A)  $y = \frac{7}{4}x - \frac{9}{4}$                       B)  $y = \frac{12}{7}x + \frac{9}{7}$                       C)  $y = 4x + 12$                       D)  $y = \frac{4}{7}x + \frac{9}{7}$

**Solve the equation for the indicated variable.**

87)  $A = \frac{1}{2}bh$ , for  $b$  87) \_\_\_\_\_

- A)  $b = \frac{2A}{h}$                       B)  $b = \frac{Ah}{2}$                       C)  $b = \frac{h}{2A}$                       D)  $b = \frac{A}{2h}$

88)  $S = 2\pi rh + 2\pi r^2$ , for  $h$  88) \_\_\_\_\_

- A)  $h = \frac{S}{2\pi r} - 1$                       B)  $h = \frac{S - 2\pi r^2}{2\pi r}$                       C)  $h = S - r$                       D)  $h = 2\pi(S - r)$



89)  $V = \frac{1}{3}Bh$ , for h 89) \_\_\_\_\_

A)  $h = \frac{V}{3B}$       B)  $h = \frac{3B}{V}$       C)  $h = \frac{3V}{B}$       D)  $h = \frac{B}{3V}$

90)  $P = S_1 + S_2 + S_3$ , for  $S_3$  90) \_\_\_\_\_

A)  $S_3 = S_1 + P - S_2$       B)  $S_3 = P + S_1 + S_2$   
 C)  $S_3 = P - S_1 - S_2$       D)  $S_3 = S_1 + S_2 - P$

91)  $F = \frac{9}{5}C + 32$ , for C 91) \_\_\_\_\_

A)  $C = \frac{F - 32}{9}$       B)  $C = \frac{5}{F - 32}$       C)  $C = \frac{9}{5}(F - 32)$       D)  $C = \frac{5}{9}(F - 32)$

92)  $d = rt$ , for t 92) \_\_\_\_\_

A)  $t = \frac{d}{r}$       B)  $t = d - r$       C)  $t = \frac{r}{d}$       D)  $t = dr$

93)  $P = 2L + 2W$ , for L 93) \_\_\_\_\_

A)  $L = P - W$       B)  $L = P - 2W$       C)  $L = \frac{P - W}{2}$       D)  $L = \frac{P - 2W}{2}$

**Let x represent the number. Write the English phrase as an algebraic expression.**

94) The sum of 37 and a number 94) \_\_\_\_\_

A)  $37x$       B)  $37 - x$       C) 37      D)  $37 + x$

95) A number increased by 144 95) \_\_\_\_\_

A) 144      B)  $x - 144$       C)  $x + 144$       D)  $144x$

96) 67 less than a number 96) \_\_\_\_\_

A)  $x - 67$       B)  $x + 67$       C)  $67x$       D)  $67 - x$

97) The quotient of a number and 32 97) \_\_\_\_\_

A)  $\frac{32}{x}$       B)  $32x$       C)  $\frac{x}{32}$       D)  $32 - x$

98) 16 less than the product of 9 and a number 98) \_\_\_\_\_

A)  $\frac{x}{9} - 16$       B)  $9 + x - 16$       C)  $9x - 16$       D)  $16 - 9x$

99) The sum of twice a number and 16 99) \_\_\_\_\_

A)  $2 + x + 16$       B)  $2(x + 16)$       C)  $32 + x$       D)  $2x + 16$

100) Twice the sum of a number and 36 100) \_\_\_\_\_

A)  $72 + x$       B)  $2x + 36$       C)  $36(x + 2)$       D)  $2(x + 36)$

- 101) Four times the difference of a number and 12 101) \_\_\_\_\_  
 A)  $4x - 12$                       B)  $4(x - 12)$                       C)  $4(12 - x)$                       D)  $\frac{x - 12}{4}$

**Write a mathematical expression for the situation described.**

- 102) Two numbers have a sum of 49. If one number is  $q$ , express the other number in terms of  $q$ . 102) \_\_\_\_\_  
 A)  $q - 49$                       B)  $49 - 2q$                       C)  $49 - q$                       D)  $q + 49$

- 103) A 41-centimeter piece of rope is cut into two pieces. If one piece is  $z$  centimeters long, express the other length as an algebraic expression in  $z$ . 103) \_\_\_\_\_  
 A)  $(41 - z)$  cm                      B)  $(z - 41)$  cm                      C)  $(41 - 2z)$  cm                      D)  $(z + 41)$  cm

- 104) In the race for Student Body President, Jose received 291 more votes than Angela. If Angela received  $x$  votes, how many votes did Jose receive? 104) \_\_\_\_\_  
 A)  $(291x)$  votes                      B)  $(291 - x)$  votes                      C)  $(x - 291)$  votes                      D)  $(x + 291)$  votes

- 105) During a walk-a-thon, Rosilyn walked 18 fewer laps than June walked. If June walked  $b$  laps, how many laps did Rosilyn walk? 105) \_\_\_\_\_  
 A)  $\left(\frac{b}{18}\right)$  laps                      B)  $(b - 18)$  laps                      C)  $(b + 18)$  laps                      D)  $(18 - b)$  laps

- 106) Suppose the regular price of a car is  $c$  dollars. Write a mathematical expression for the following: "I'll give you one-eighth off regular price." 106) \_\_\_\_\_  
 A)  $8c$                       B)  $c - \frac{1}{8}$                       C)  $\frac{1}{8}c$                       D)  $c \div \frac{1}{8}$

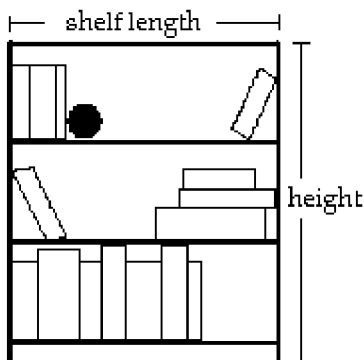
- 107) Suppose Ella is  $x$  years of age. Write a mathematical expression for the following: "Ella's mother is three times the sum of Ella's age and 10." 107) \_\_\_\_\_  
 A)  $x + 30$                       B)  $3x - 10$                       C)  $3x + 10$                       D)  $3(x + 10)$

**Solve the problem.**

- 108) Angles A and B are complementary angles. Determine the measures of angles A and B if angle B is 2 less than three times the size of angle A. 108) \_\_\_\_\_  
 A)  $A = 22^\circ$ ;  $B = 68^\circ$                       B)  $A = 22^\circ$ ;  $B = 64^\circ$   
 C)  $A = 31^\circ$ ;  $B = 59^\circ$                       D)  $A = 23^\circ$ ;  $B = 67^\circ$

- 109) The sum of the angles of a triangle is  $180^\circ$ . Find the three angles of the triangle if one angle is twice the smallest angle and the third angle is  $32^\circ$  greater than the smallest angle. 109) \_\_\_\_\_  
 A)  $30^\circ, 60^\circ, 90^\circ$                       B)  $21^\circ, 53^\circ, 106^\circ$                       C)  $37^\circ, 74^\circ, 69^\circ$                       D)  $21^\circ, 42^\circ, 117^\circ$

- 110) A bookcase is to be constructed as shown in the figure below. The height of the bookcase is 4 feet longer than the length of a shelf. If 20 feet of lumber is available for the entire unit (including the shelves, but NOT the back of the bookcase), find the length and height of the unit. 110) \_\_\_\_\_



- A) length = 8 ft; height = 9 ft  
 B) length = 3 ft; height = 7 ft  
 C) length = 2 ft; height = 8 ft  
 D) length = 2 ft; height = 6 ft
- 111) An auto repair shop charged a customer \$234 to repair a car. The bill listed \$54 for parts and the remainder for labor. If the cost of labor is \$30 per hour, how many hours of labor did it take to repair the car? 111) \_\_\_\_\_
- A) 5 hr  
 B) 6.5 hr  
 C) 7 hr  
 D) 6 hr
- 112) After a 17% price reduction, a boat sold for \$27,390. What was the boat's price before the reduction? (Round to the nearest cent, if necessary.) 112) \_\_\_\_\_
- A) \$33,000  
 B) \$161,117.65  
 C) \$32,046.30  
 D) \$4656.30
- 113) Inclusive of a 7.4% sales tax, a diamond ring sold for \$2792.40. Find the price of the ring before the tax was added. (Round to the nearest cent, if necessary.) 113) \_\_\_\_\_
- A) \$2999.04  
 B) \$2585.76  
 C) \$206.64  
 D) \$2600
- 114) A 12-ft. board is cut into 2 pieces so that one piece is 4 feet longer than 3 times the shorter piece. If the shorter piece is  $x$  feet long, find the lengths of both pieces. 114) \_\_\_\_\_
- A) shorter piece: 12 ft; longer piece: 40 ft  
 B) shorter piece: 6 ft; longer piece: 36 ft  
 C) shorter piece: 2 ft; longer piece: 10 ft  
 D) shorter piece: 32 ft; longer piece: 36 ft
- 115) The president of a certain university makes three times as much money as one of the department heads. If the total of their salaries is \$190,000, find each worker's salary. 115) \_\_\_\_\_
- A) president's salary = \$14,250; department head's salary = \$4750  
 B) president's salary = \$47,500; department head's salary = \$142,500  
 C) president's salary = \$142,500; department head's salary = \$47,500  
 D) president's salary = \$95,000; department head's salary = \$47,500
- 116) The population of a town increased by 20% in 5 years. If the population is currently 10,000, find the population of this town 5 years ago. (Round to the nearest whole, if necessary.) 116) \_\_\_\_\_
- A) 8333  
 B) 2000  
 C) 8000  
 D) 50,000

- 117) The three most prominent buildings in a city, Washington Center, Lincoln Galleria, and Jefferson Square Tower, have a total height of 1800 feet. Find the height of each building if Jefferson Square Tower is three times as tall as Lincoln Galleria and Washington Center is 350 feet taller than Lincoln Galleria. 117) \_\_\_\_\_
- A) Washington Center: 630 ft  
Lincoln Galleria: 210 ft  
Jefferson Square Tower: 960 ft
- B) Washington Center: 430 ft  
Lincoln Galleria: 80 ft  
Jefferson Square Tower: 1290 ft
- C) Washington Center: 640 ft  
Lincoln Galleria: 290 ft  
Jefferson Square Tower: 870 ft
- D) Washington Center: 240 ft  
Lincoln Galleria: 80 ft  
Jefferson Square Tower: 1480 ft
- 118) In a recent International Gymnastics competition, the U.S., China, and Romania were the big winners. If the total number of medals won by each team are three consecutive integers whose sum is 75 and the U.S. won more than China who won more than Romania, how many medals did each team win? 118) \_\_\_\_\_
- A) U.S.: 24 medals; China: 23 medals; Romania: 22 medals
- B) U.S.: 26 medals; China: 25 medals; Romania: 24 medals
- C) U.S.: 27 medals; China: 26 medals; Romania: 25 medals
- D) U.S.: 77 medals; China: 76 medals; Romania: 75 medals
- 119) Stephanie is a waitress and she is paid \$2.95 per hour plus 15% of the total cost of the food and beverages she serves. If during a 5-hour shift she earns \$200, what was the total cost of the food and beverages she served? 119) \_\_\_\_\_
- A) \$1431.67                      B) \$217.94                      C) \$1235.00                      D) \$161.09
- 120) Morgan goes out to lunch and only has \$10. If she must pay 8% sales tax and wants to leave a 15% tip on the total bill (meal plus tax), what is the maximum price of the lunch she can order? 120) \_\_\_\_\_
- A) \$15.40                      B) \$9.45                      C) -\$7.21                      D) \$8.05
- 121) Two cars start from the same point and travel in the same direction. If one car is traveling 61 miles per hour and the other car is traveling at 57 miles per hour, how far apart will they be after 6.5 hours? 121) \_\_\_\_\_
- A) 767 miles                      B) 396.5 miles                      C) 370.5 miles                      D) 26 miles
- 122) Two trains leave a train station at the same time. One travels east at 10 miles per hour. The other train travels west at 12 miles per hour. In how many hours will the two trains be 173.8 miles apart? 122) \_\_\_\_\_
- A) 4 hours                      B) 7.9 hours                      C) 15.8 hours                      D) 8.4 hours
- 123) Ken and Kara are 29 miles apart on a calm lake paddling toward each other. Ken paddles at 4 miles per hour, while Kara paddles at 7 miles per hour. How long will it take them to meet? 123) \_\_\_\_\_
- A)  $2\frac{7}{11}$  hours                      B) 18 hours                      C)  $2\frac{1}{8}$  hours                      D)  $9\frac{2}{3}$  hours
- 124) A freight train leaves a station traveling at 32 km/h. Two hours later, a passenger train leaves the same station traveling in the same direction at 52 km/h. How long does it take the passenger train to catch up to the freight train? 124) \_\_\_\_\_
- A) 4.2 hours                      B) 2.2 hours                      C) 5.2 hours                      D) 3.2 hours

- 125) Five friends drove at an average rate of 60 miles per hour to a weekend retreat. On the way home, they took the same route but averaged 75 miles per hour. What was the distance between home and the retreat if the round trip took 10 hours? 125) \_\_\_\_\_
- A)  $5\frac{5}{9}$  miles      B)  $333\frac{1}{3}$  miles      C) 3000 miles      D)  $666\frac{2}{3}$  miles
- 126) Gary can hike on level ground 3 miles an hour faster than he can on uphill terrain. Yesterday, he hiked 37 miles, spending 2 hours on level ground and 5 hours on uphill terrain. Find his average speed on level ground. 126) \_\_\_\_\_
- A)  $5\frac{2}{7}$  mph      B)  $7\frac{6}{7}$  mph      C)  $7\frac{3}{7}$  mph      D)  $4\frac{3}{7}$  mph
- 127) During a hurricane evacuation from the east coast of Georgia, a family traveled 270 miles west. For part of the trip, they averaged 60 mph, but as the congestion got bad, they had to slow to 20 mph. If the total time of travel was 6 hours, how many miles did they drive at the reduced speed? 127) \_\_\_\_\_
- A) 50 miles      B) 55 miles      C) 40 miles      D) 45 miles
- 128) Richard works for a company that pays \$18 per hour for the first forty hours and \$27 per hour for each hour in the week worked above the 40 hours. If he earned \$990 this week, how many overtime hours did he work? 128) \_\_\_\_\_
- A) 50 hours      B) 15 hours      C) 9 hours      D) 10 hours
- 129) Jamie sells handcrafted dolls at local art fairs. She sells small dolls for \$15 and large dolls for \$40. At the end of the Little Town Art Fair, she determined that the total amount she made by selling 12 dolls was \$255. Determine the number of small and the number of large dolls that she sold. 129) \_\_\_\_\_
- A) 8 small, 4 large      B) 4 small, 8 large      C) 3 small, 9 large      D) 9 small, 3 large
- 130) 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 \$800, how much did Kevin invest in the mutual fund? 130) \_\_\_\_\_
- A) \$4000      B) \$3000      C) \$6000      D) \$5000
- 131) How much pure acid should be mixed with 8 gallons of a 50% acid solution in order to get an 80% acid solution? 131) \_\_\_\_\_
- A) 32 gal      B) 20 gal      C) 4 gal      D) 12 gal
- 132) The owners of a candy store want to sell, for \$6 per pound, a mixture of chocolate-covered raisins, which usually sells for \$3 per pound, and chocolate-covered macadamia nuts, which usually sells for \$8 per pound. They have a 30-pound barrel of the raisins. How many pounds of the nuts should they mix with the barrel of raisins so that they hit their target value of \$6 per pound for the mixture? 132) \_\_\_\_\_
- A) 45 lb      B) 48 lb      C) 42 lb      D) 39 lb
- 133) The manager of a coffee shop has one type of coffee that sells for \$6 per pound and another type that sells for \$10 per pound. The manager wishes to mix 100 pounds of the \$10 coffee to get a mixture that will sell for \$7 per pound. How many pounds of the \$6 coffee should be used? 133) \_\_\_\_\_
- A) 400 lb      B) 300 lb      C) 150 lb      D) 200 lb



144)  $4 - 2(1 - x) \leq 10$  144) \_\_\_\_\_  
 A)  $x < 4$  B)  $x \geq 4$  C)  $x \leq 5$  D)  $x \leq 4$

145)  $-6x - 8 \leq -2(2x - 1)$  145) \_\_\_\_\_  
 A)  $x \leq -5$  B)  $x \geq -5$  C)  $x > -5$  D)  $x < -5$

**Solve the problem.**

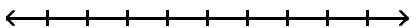
146) Shaundra has \$3.00 to make a long distance call at a pay phone. The rates listed on the phone for a long distance call are \$1.80 for the first three minutes and \$0.40 for each additional minute or portion of a minute. Find the maximum number of minutes Shaundra can stay on the line. 146) \_\_\_\_\_  
 A) 3 minutes B) 6 minutes C) 2 minutes D) 8 minutes

147) Michael scored 67, 87, and 95 on three algebra tests. What must he score on the fourth test in order to have an average grade of at least 85? 147) \_\_\_\_\_  
 A) 62 B) 83 C) 91 D) 29

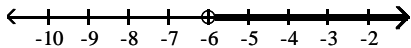
148) Greg is opening a car wash. He estimates his cost equation as  $C = 5000 + 0.05x$  and his revenue equation as  $R = 1.85x$ , where  $x$  is the number of cars washed in a six month period. Find the minimum number of cars that need to be washed in a six month period to make a profit. 148) \_\_\_\_\_  
 A) 27,778 cars B) 278 cars C) 1778 cars D) 2778 cars

**Solve the inequality and graph the solution on the number line.**

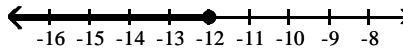
149)  $a - 3 < -9$  149) \_\_\_\_\_



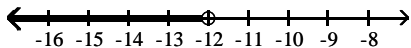
A)



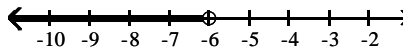
B)



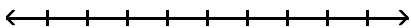
C)



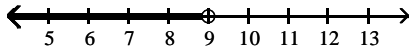
D)



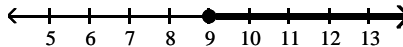
150)  $2x + 7 < 25$  150) \_\_\_\_\_



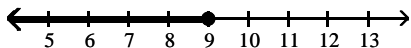
A)



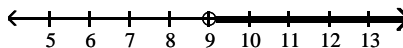
B)



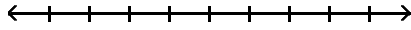
C)



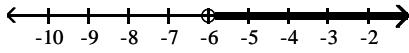
D)



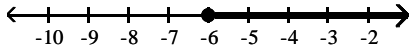
151)  $4z - 5 > 3z - 11$



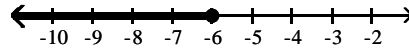
A)



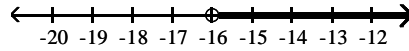
C)



B)

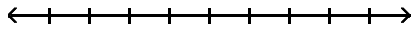


D)

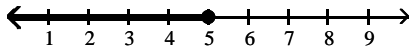


151) \_\_\_\_\_

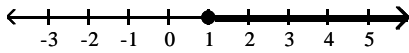
152)  $-4c - 2 \leq -5c + 3$



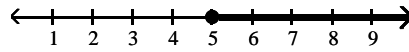
A)



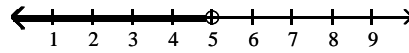
C)



B)

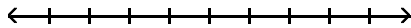


D)

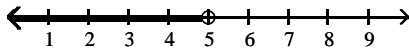


152) \_\_\_\_\_

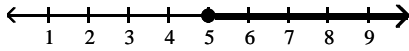
153)  $6 - 2(2 - x) \leq 12$



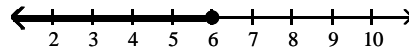
A)



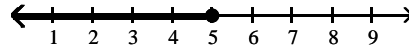
C)



B)

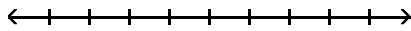


D)

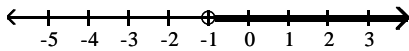


153) \_\_\_\_\_

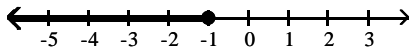
154)  $-10r + 4 \leq -2(4r - 3)$



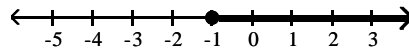
A)



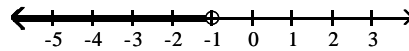
C)



B)



D)

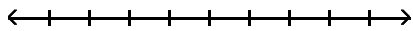


154) \_\_\_\_\_

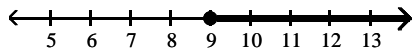


155)  $\frac{x}{3} \geq 2 + \frac{x}{9}$

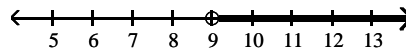
155) \_\_\_\_\_



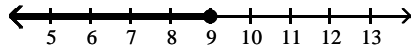
A)



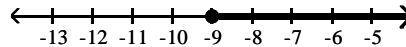
B)



C)



D)



**Solve the inequality and give the solution in interval notation.**

156)  $a + 6 < -1$

156) \_\_\_\_\_

A)  $(-\infty, 5]$

B)  $(-\infty, 5)$

C)  $(-\infty, -7)$

D)  $(-7, \infty)$

157)  $2x + 4 < 20$

157) \_\_\_\_\_

A)  $[8, \infty)$

B)  $(8, \infty)$

C)  $(-\infty, 8)$

D)  $(-\infty, 8]$

158)  $7z + 6 > 6z + 5$

158) \_\_\_\_\_

A)  $(-1, \infty)$

B)  $(11, \infty)$

C)  $(-\infty, -1]$

D)  $[-1, \infty)$

159)  $-4c + 5 \leq -5c - 2$

159) \_\_\_\_\_

A)  $(-\infty, -7)$

B)  $[3, \infty)$

C)  $(-\infty, -7]$

D)  $[-7, \infty)$

160)  $8 - 3(2 - x) \leq -19$

160) \_\_\_\_\_

A)  $[-7, \infty)$

B)  $(-\infty, -7)$

C)  $(-\infty, -7]$

D)  $(-\infty, -6]$

161)  $-12r - 4 \leq -2(5r + 6)$

161) \_\_\_\_\_

A)  $(-\infty, 4)$

B)  $[4, \infty)$

C)  $(-\infty, 4]$

D)  $(4, \infty)$

162)  $\frac{x}{3} \geq 5 + \frac{x}{18}$

162) \_\_\_\_\_

A)  $(-\infty, 18]$

B)  $[18, \infty)$

C)  $[-18, \infty)$

D)  $(18, \infty)$

163)  $\frac{x-2}{12} \geq \frac{x-3}{15} + \frac{1}{60}$

163) \_\_\_\_\_

A)  $(-\infty, -1)$

B)  $(-1, \infty)$

C)  $(-\infty, -1]$

D)  $[-1, \infty)$

**Find the solution set for the inequality.**

164)  $a - 6 < 1$

164) \_\_\_\_\_

A)  $\{a \mid a < 7\}$

B)  $\{a \mid a < -5\}$

C)  $\{a \mid a > -5\}$

D)  $\{a \mid a > 7\}$

165)  $4x + 6 < 38$

165) \_\_\_\_\_

A)  $\{x \mid x > 6\}$

B)  $\{x \mid x > 8\}$

C)  $\{x \mid x < 6\}$

D)  $\{x \mid x < 8\}$

166)  $5z + 2 > 4z + 4$

166) \_\_\_\_\_

A)  $\{z \mid z < 2\}$

B)  $\{z \mid z > 2\}$

C)  $\{z \mid z > 6\}$

D)  $\{z \mid z < 6\}$

- 167)  $4c - 2 \leq 3c - 4$       A)  $\{c | c \leq -2\}$       B)  $\{c | c \geq -2\}$       C)  $\{c | c \geq -6\}$       D)  $\{c | c < -2\}$       167) \_\_\_\_\_
- 168)  $-4 + 8x - 2 \geq 7x - 16$       A)  $\{x | x < 8\}$       B)  $\{x | x \leq -10\}$       C)  $\{x | x > 8\}$       D)  $\{x | x \geq -10\}$       168) \_\_\_\_\_
- 169)  $8 - 3(2 - x) \leq 5$       A)  $\{x | x \geq 1\}$       B)  $\{x | x \leq 2\}$       C)  $\{x | x \leq 1\}$       D)  $\{x | x < 1\}$       169) \_\_\_\_\_
- 170)  $-8x + 2 \leq -2(3x + 3)$       A)  $\{x | x \geq 4\}$       B)  $\{x | x \leq 4\}$       C)  $\{x | x > 4\}$       D)  $\{x | x < 4\}$       170) \_\_\_\_\_
- 171)  $\frac{1}{3}(x + 2) > \frac{1}{8}(x + 2)$       A)  $\{x | x < 2\}$       B)  $\{x | x > 2\}$       C)  $\{x | x > -2\}$       D)  $\{x | x < -2\}$       171) \_\_\_\_\_
- 172)  $\frac{x + 8}{4} - \frac{2}{7} > \frac{x + 2}{7}$       A)  $\{x | x < -\frac{56}{11}\}$       B)  $\{x | x > 24\}$       C)  $\{x | x > -\frac{40}{3}\}$       D)  $\{x | x < -\frac{40}{3}\}$       172) \_\_\_\_\_

**Solve the inequality and give the solution in interval notation.**

- 173)  $-8 < x - 1 \leq 8$       A)  $(-9, 7]$       B)  $[-9, 7)$       C)  $(-7, 9]$       D)  $[-7, 9)$       173) \_\_\_\_\_
- 174)  $25 \leq 5x + 5 \leq 30$       A)  $[-5, -4]$       B)  $(4, 5)$       C)  $(-5, -4)$       D)  $[4, 5]$       174) \_\_\_\_\_
- 175)  $-7 \leq -2x + 5 < -3$       A)  $[4, 6)$       B)  $[-6, -4)$       C)  $(-6, -4]$       D)  $(4, 6]$       175) \_\_\_\_\_
- 176)  $-2 \leq \frac{7}{4}x - 9 < 5$       A)  $[4, 5)$       B)  $[4, 8)$       C)  $(4, 8]$       D)  $(4, 5]$       176) \_\_\_\_\_
- 177)  $6x + 9 \geq 4$  and  $2x - 4 < 8$       A)  $(-\frac{5}{6}, 6]$       B)  $[-\frac{5}{6}, 6)$       C)  $(-\frac{5}{6}, 2]$       D)  $[-\frac{5}{6}, 2)$       177) \_\_\_\_\_

**Solve the inequality and give the solution set.**

- 178)  $0 \leq \frac{2x + 3}{3} < 3$       A)  $\{x | -\frac{3}{2} \leq x < 3\}$       B)  $\{x | -\frac{3}{2} \leq x \leq 3\}$       C)  $\{x | -\frac{3}{2} < x \leq 3\}$       D)  $\{x | -\frac{3}{2} < x < 3\}$       178) \_\_\_\_\_

179)  $\frac{1}{2} < \frac{-x+3}{2} < 2$  179) \_\_\_\_\_

- A)  $\{x \mid -1 < x < 2\}$       B)  $\{x \mid -1 < x < \frac{11}{4}\}$       C)  $\{x \mid -1 < x < -1\}$       D)  $\{x \mid -2 < x < 1\}$

180)  $-4 < \frac{-2(4-x)}{7} < \frac{2}{9}$  180) \_\_\_\_\_

- A)  $\{x \mid -11 < x < 10\}$       B)  $\{x \mid -10 < x < \frac{43}{9}\}$   
 C)  $\{x \mid -10 < x < 11\}$       D)  $\{x \mid -\frac{43}{9} < x < 10\}$

181)  $x \leq 2$  and  $x \geq -2$  181) \_\_\_\_\_

- A)  $\{x \mid -2 < x < 2\}$       B)  $\{x \mid x \leq -2\}$       C)  $\{x \mid -2 \leq x \leq 2\}$       D)  $\{\}$

182)  $x \leq 2$  and  $x \geq 3$  182) \_\_\_\_\_

- A)  $\{x \mid x \leq 2\}$       B)  $\{x \mid 2 \leq x \leq 3\}$       C)  $\{x \mid 2 < x < 3\}$       D)  $\{\}$

183)  $x + 4 \leq 1$  and  $x + 4 > -5$  183) \_\_\_\_\_

- A)  $\{x \mid -9 < x \leq -3\}$       B)  $\{x \mid -1 \leq x < 5\}$       C)  $\{x \mid -1 < x \leq 5\}$       D)  $\{x \mid -9 \leq x < -3\}$

**Solve the problem.**

184) The water acidity in a pool is considered normal when the average pH reading of three daily measurements is greater than 7.2 and less than 7.8. If the first two pH reading are 7.29 and 7.89, find the range of pH values for the third reading that will result in the acidity level being normal. 184) \_\_\_\_\_

- A)  $6.42 < x < 8.22$       B)  $7.02 < x < 8.82$       C)  $7.2 < x < 7.8$       D)  $7.62 < x < 9.42$

185) Ashley's grades on her first 3 exams are 85, 78, and 86. An average greater than or equal to 80 and less than 90 will result in a final grade of B. What range of grades on Ashley's fourth and final exam will result in a final grade of B? The maximum grade is 100. 185) \_\_\_\_\_

- A)  $71 \leq x < 111$       B)  $71 \leq x \leq 100$   
 C)  $61 \leq x \leq 90$       D) Impossible to get a B.

186) A velocity  $\geq 0$  indicates that the object is traveling upward and a velocity  $\leq 0$  indicates that the object is traveling downward. An object is projected upward and  $v(t) = -32t + 192$ ,  $0 \leq t \leq 10$ . Determine the interval when the object is traveling upward. 186) \_\_\_\_\_

- A)  $[0, 6]$       B)  $[0, 32]$       C)  $[0, 5]$       D)  $[6, 10]$

187) A velocity  $\geq 0$  indicates that the object is traveling upward and a velocity  $\leq 0$  indicates that the object is traveling downward. An object is projected upward and  $v(t) = -32t + 156.8$ ,  $0 \leq t \leq 12$ . Determine the interval when the object is traveling downward. 187) \_\_\_\_\_

- A)  $[3.9, 7.9]$       B)  $[4.9, 12]$       C)  $[4.9, 32]$       D)  $[0, 4.9]$

**Find the solution set for the inequality.**

188)  $x \leq 4$  or  $x \geq 1$  188) \_\_\_\_\_

- A)  $\{x \mid 1 < x < 4\}$       B)  $\{x \mid x \leq 1$  or  $x \geq 4\}$   
 C)  $\{x \mid 1 \leq x \leq 4\}$       D)  $\mathcal{R}$

189)  $x \leq -2$  or  $x \geq 2$  189) \_\_\_\_\_  
 A)  $\{x \mid x \leq -2 \text{ or } x \geq 2\}$  B)  $\{x \mid -2 < x < 2\}$   
 C)  $\{x \mid -2 \leq x \leq 2\}$  D)  $\mathcal{R}$

190)  $9x - 4 \leq 50$  or  $-x + 4 < -6$  190) \_\_\_\_\_  
 A)  $\{x \mid x \leq \frac{46}{9} \text{ or } x > 10\}$  B)  $\{x \mid 6 \leq x < 10\}$   
 C)  $\{x \mid x \leq 6 \text{ or } x > 10\}$  D)  $\{x \mid \frac{46}{9} \leq x < 10\}$

**Solve the inequality and give the solution in interval notation.**

191)  $x + 7 < 5$  or  $-7x < -21$  191) \_\_\_\_\_  
 A)  $(-\infty, \infty)$  B)  $(-\infty, 3)$  C)  $(-2, 3)$  D)  $(-\infty, -2) \cup (3, \infty)$

192)  $-4x > -16$  or  $x + 4 > 3$  192) \_\_\_\_\_  
 A)  $(-1, \infty)$  B)  $(-\infty, -1) \cup (4, \infty)$  C)  $(-\infty, \infty)$  D)  $(-1, 4)$

193)  $3x - 2 > 13$  or  $-x + 9 \geq -4$  193) \_\_\_\_\_  
 A)  $(-\infty, \infty)$  B)  $(5, 13]$  C)  $[5, 13)$  D)  $(5, \infty)$

**Solve the problem.**

194) An Algebra class had 5 tests over the course of the semester. The table gives the average and high score for each of the 5 tests. 194) \_\_\_\_\_

	Ave.	High
Test 1	74	100
Test 2	83	95
Test 3	67	97
Test 4	75	100
Test 5	66	94

For what tests was the high score greater than 97 or the average greater than 80.

- A) Test 1, Test 4 B) Test 1, Test 2, Test 3, Test 4  
 C) Test 1, Test 2, Test 4 D) None

195) An Algebra class had 5 tests over the course of the semester. The table gives the average and high score for each of the 5 tests. 195) \_\_\_\_\_

	Ave.	High
Test 1	75	100
Test 2	84	95
Test 3	68	97
Test 4	76	100
Test 5	67	93

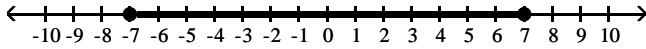
For what tests was the high score less than 96 or the average less than 70.

- A) Test 3 B) Test 1, Test 4  
 C) Test 2, Test 3, Test 5 D) Test 2, Test 5

**Provide an appropriate response.**

196) The graph of the solution to \_\_\_\_\_ on the number line is

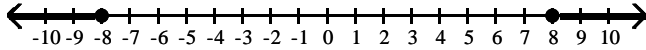
196) \_\_\_\_\_



- A)  $|x| < 7$                       B)  $|x| > 7$                       C)  $|x| \leq 7$                       D)  $|x| \geq 7$

197) The graph of the solution to \_\_\_\_\_ on the number line is

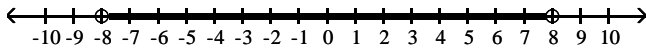
197) \_\_\_\_\_



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

198) The graph of the solution to \_\_\_\_\_ on the number line is

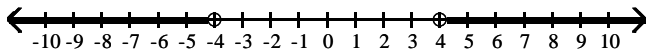
198) \_\_\_\_\_



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

199) The graph of the solution to \_\_\_\_\_ on the number line is

199) \_\_\_\_\_



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

**Find the solution set for the equation.**

200)  $|x| = 7$

200) \_\_\_\_\_

- A)  $\{-7\}$                       B)  $\{7\}$                       C)  $\{49\}$                       D)  $\{-7, 7\}$

201)  $|r + 9| = 6$

201) \_\_\_\_\_

- A)  $\{15, -3\}$                       B)  $\{3\}$                       C)  $\{-15, -3\}$                       D)  $\emptyset$

202)  $|t + 2| = 0$

202) \_\_\_\_\_

- A)  $\{-2\}$                       B)  $\{2, -2\}$                       C)  $\{0\}$                       D)  $\{2\}$

203)  $|3m + 2| = 5$

203) \_\_\_\_\_

- A)  $\{1, -\frac{7}{3}\}$                       B)  $\{\frac{3}{2}, -\frac{7}{2}\}$                       C)  $\{-1, \frac{7}{3}\}$                       D)  $\emptyset$

204)  $|7m + 6| + 9 = 12$

204) \_\_\_\_\_

- A)  $\{\frac{3}{7}, \frac{9}{7}\}$                       B)  $\{-\frac{3}{7}, -\frac{9}{7}\}$                       C)  $\{-\frac{1}{2}, -\frac{3}{2}\}$                       D)  $\emptyset$

205)  $|\frac{11y + 22}{2}| = 11$

205) \_\_\_\_\_

- A)  $\{-4, 4\}$                       B)  $\{4, 0\}$                       C)  $\{-4, 0\}$                       D)  $\emptyset$

206)  $|2(x + 1) + 4| = 10$

206) \_\_\_\_\_

- A)  $\{-8, 0\}$                       B)  $\{-6, 0\}$                       C)  $\{-6, 4\}$                       D)  $\{-8, 2\}$

207)  $3 + \left| \frac{2-x}{2} \right| = 5$  207) \_\_\_\_\_  
 A)  $\{-6, 2\}$                       B)  $\{-2, 2\}$                       C)  $\{-6, 6\}$                       D)  $\{-2, 6\}$

208)  $|5(5x + 2)| = 0$  208) \_\_\_\_\_  
 A)  $\{-\frac{2}{25}\}$                       B)  $\{-\frac{1}{2}\}$                       C)  $\{-\frac{2}{5}\}$                       D)  $\{\frac{2}{5}\}$

**Find the solution set for the inequality.**

209)  $|x| < 9$  209) \_\_\_\_\_  
 A)  $\{x | x > 9 \text{ and } x < -9\}$                       B)  $\{x | 0 \leq x < 9\}$   
 C)  $\{x | -9 < x < 9\}$                       D)  $\{x | x < -9 \text{ or } x > 9\}$

210)  $|r + 4| < 9$  210) \_\_\_\_\_  
 A)  $\{r | r < -5 \text{ or } r > 13\}$                       B)  $\{r | -13 < r < 5\}$   
 C)  $\{r | -5 < r < 13\}$                       D)  $\{r | r < -13 \text{ or } r > 5\}$

211)  $|2m + 5| < 4$  211) \_\_\_\_\_  
 A)  $\{m | m < -\frac{9}{2} \text{ or } m > -\frac{1}{2}\}$                       B)  $\{m | m < \frac{1}{2} \text{ or } m > \frac{9}{2}\}$   
 C)  $\{m | \frac{1}{2} < m < \frac{9}{2}\}$                       D)  $\{m | -\frac{9}{2} < m < -\frac{1}{2}\}$

212)  $|6m + 9| + 4 \leq 8$  212) \_\_\_\_\_  
 A)  $\{m | m \leq \frac{5}{6} \text{ or } m \geq \frac{13}{6}\}$                       B)  $\{m | m \leq -\frac{13}{6} \text{ or } m \geq -\frac{5}{6}\}$   
 C)  $\{m | -\frac{13}{6} \leq m \leq -\frac{5}{6}\}$                       D)  $\{m | \frac{5}{6} \leq m \leq \frac{13}{6}\}$

213)  $\left| \frac{11y + 33}{3} \right| < 11$  213) \_\_\_\_\_  
 A)  $\{y | y < -6 \text{ or } y > 0\}$                       B)  $\{y | -6 < y < 0\}$   
 C)  $\{y | -6 < y < 6\}$                       D)  $\{y | 0 < y < 6\}$

214)  $|3(x + 1) + 9| \leq 15$  214) \_\_\_\_\_  
 A)  $\{x | -7 \leq x \leq 3\}$                       B)  $\{x | x \leq -7 \text{ or } x \geq 3\}$   
 C)  $\{x | x \leq -9 \text{ or } x \geq 1\}$                       D)  $\{x | -9 \leq x \leq 1\}$

215)  $5 + \left| \frac{2-x}{2} \right| < 8$  215) \_\_\_\_\_  
 A)  $\{x | -8 < x < 4\}$                       B)  $\{x | x < -4 \text{ or } x > 8\}$   
 C)  $\{x | -4 < x < 8\}$                       D)  $\{x | -4 < x < 4\}$



**Solve the inequality and give the solution set.**

225)  $|x| < -9$  225) \_\_\_\_\_  
 A)  $\mathbb{R}$  B)  $\emptyset$  C)  $\{-9\}$  D)  $\{x | -9 < x < 9\}$

226)  $|x| > -3$  226) \_\_\_\_\_  
 A)  $\{3\}$  B)  $\emptyset$  C)  $\{x | -3 < x < 3\}$  D)  $\mathbb{R}$

227)  $|6x + 3| - 3 < -5$  227) \_\_\_\_\_  
 A)  $\mathbb{R}$  B)  $\{x | -\frac{5}{6} < x < -\frac{1}{6}\}$   
 C)  $\{x | x < -\frac{5}{6} \text{ or } x > -\frac{1}{6}\}$  D)  $\emptyset$

228)  $|7x + 1| - 7 > -9$  228) \_\_\_\_\_  
 A)  $\{x | x < -\frac{3}{7} \text{ or } x > \frac{1}{7}\}$  B)  $\mathbb{R}$   
 C)  $\emptyset$  D)  $\{x | -\frac{3}{7} < x < \frac{1}{7}\}$

229)  $|x - 6| \leq 0$  229) \_\_\_\_\_  
 A)  $\{-6\}$  B)  $\{6\}$  C)  $\{0\}$  D)  $\{t | -6 \leq x \leq 6\}$

230)  $|x - 8| \geq 0$  230) \_\_\_\_\_  
 A)  $\{-8\}$  B)  $\mathbb{R}$  C)  $\{t | -8 \leq x \leq 8\}$  D)  $\{8\}$

231)  $|x + 7| > 0$  231) \_\_\_\_\_  
 A)  $\{x | -7 < x < 7\}$  B)  $\mathbb{R}$   
 C)  $\{x | x < -7 \text{ or } x > -7\}$  D)  $\emptyset$

232)  $|x + 7| < 0$  232) \_\_\_\_\_  
 A)  $\{x | x < -7 \text{ or } x > -7\}$  B)  $\emptyset$   
 C)  $\mathbb{R}$  D)  $\{x | -7 < x < 7\}$

**Find the solution set for the inequality.**

233)  $|2x - 4| \geq 0$  233) \_\_\_\_\_  
 A)  $\{x | x \leq -2 \text{ or } x \geq 2\}$  B)  $\emptyset$   
 C)  $\mathbb{R}$  D)  $\{x | -2 \leq x \leq 2\}$

234)  $\left| \frac{8x - 1}{3} \right| < 0$  234) \_\_\_\_\_  
 A)  $\left\{ x \mid x \leq -\frac{1}{8} \text{ or } x \geq \frac{1}{8} \right\}$  B)  $\left\{ x \mid -\frac{1}{8} \leq x \leq \frac{1}{8} \right\}$   
 C)  $\emptyset$  D)  $\mathbb{R}$



Find the solution set for the equation.

235)  $|6s - 2| = |s + 2|$

A)  $\{\frac{4}{5}, -\frac{6}{7}\}$

B)  $\{-\frac{4}{5}, 0\}$

C)  $\{\frac{4}{5}, 0\}$

D)  $\emptyset$

235) \_\_\_\_\_

236)  $|n + 5| = |6 - n|$

A)  $\{1\}$

B)  $\{-2\}$

C)  $\{\frac{1}{2}\}$

D)  $\emptyset$

236) \_\_\_\_\_

237)  $|\frac{1}{2}n + 2| = |\frac{3}{4}n - 2|$

A)  $\{10\}$

B)  $\{16, 0\}$

C)  $\{16, 12\}$

D)  $\emptyset$

237) \_\_\_\_\_

## Answer Key

Testname: UNTITLED2

- 1) B
- 2) A
- 3) D
- 4) D
- 5) D
- 6) C
- 7) C
- 8) B
- 9) B
- 10) A
- 11) D
- 12) D
- 13) D
- 14) C
- 15) C
- 16) A
- 17) A
- 18) B
- 19) B
- 20) D
- 21) D
- 22) B
- 23) D
- 24) B
- 25) B
- 26) B
- 27) C
- 28) D
- 29) D
- 30) A
- 31) C
- 32) B
- 33) B
- 34) C
- 35) B
- 36) C
- 37) D
- 38) B
- 39) C
- 40) A
- 41) D
- 42) B
- 43) B
- 44) D
- 45) B
- 46) C
- 47) A
- 48) D
- 49) A
- 50) D

## Answer Key

Testname: UNTITLED2

- 51) B
- 52) B
- 53) A
- 54) B
- 55) D
- 56) B
- 57) B
- 58) D
- 59) D
- 60) B
- 61) C
- 62) C
- 63) B
- 64) B
- 65) A
- 66) B
- 67) A
- 68) D
- 69) C
- 70) B
- 71) B
- 72) D
- 73) A
- 74) D
- 75) D
- 76) C
- 77) D
- 78) D
- 79) B
- 80) A
- 81) D
- 82) A
- 83) D
- 84) A
- 85) B
- 86) D
- 87) A
- 88) B
- 89) C
- 90) C
- 91) D
- 92) A
- 93) D
- 94) D
- 95) C
- 96) A
- 97) C
- 98) C
- 99) D
- 100) D

## Answer Key

Testname: UNTITLED2

- 101) B
- 102) C
- 103) A
- 104) D
- 105) B
- 106) C
- 107) D
- 108) D
- 109) C
- 110) D
- 111) D
- 112) A
- 113) D
- 114) C
- 115) C
- 116) A
- 117) C
- 118) B
- 119) C
- 120) D
- 121) D
- 122) B
- 123) A
- 124) D
- 125) B
- 126) C
- 127) D
- 128) D
- 129) D
- 130) A
- 131) D
- 132) A
- 133) B
- 134) C
- 135) B
- 136) C
- 137) D
- 138) B
- 139) C
- 140) B
- 141) B
- 142) B
- 143) B
- 144) D
- 145) B
- 146) B
- 147) C
- 148) D
- 149) D
- 150) A

## Answer Key

Testname: UNTITLED2

- 151) A
- 152) A
- 153) D
- 154) B
- 155) A
- 156) C
- 157) C
- 158) A
- 159) C
- 160) C
- 161) B
- 162) B
- 163) D
- 164) A
- 165) D
- 166) B
- 167) A
- 168) D
- 169) C
- 170) A
- 171) C
- 172) C
- 173) C
- 174) D
- 175) D
- 176) B
- 177) B
- 178) A
- 179) A
- 180) B
- 181) C
- 182) D
- 183) A
- 184) A
- 185) B
- 186) A
- 187) B
- 188) D
- 189) A
- 190) C
- 191) D
- 192) C
- 193) A
- 194) C
- 195) C
- 196) C
- 197) A
- 198) B
- 199) D
- 200) D

Answer Key

Testname: UNTITLED2

- 201) C
- 202) A
- 203) A
- 204) B
- 205) C
- 206) D
- 207) D
- 208) C
- 209) C
- 210) B
- 211) D
- 212) C
- 213) B
- 214) D
- 215) C
- 216) A
- 217) C
- 218) A
- 219) C
- 220) B
- 221) C
- 222) D
- 223) B
- 224) B
- 225) B
- 226) D
- 227) D
- 228) B
- 229) B
- 230) B
- 231) C
- 232) B
- 233) C
- 234) C
- 235) C
- 236) C
- 237) B