

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

**Determine whether the equation in one variable is linear.**

1)  $x - 3 = 15$  1) \_\_\_\_\_  
 A) linear B) not linear

2)  $x^2 - 7 = 9$  2) \_\_\_\_\_  
 A) linear B) not linear

3)  $\frac{9}{x} = 5$  3) \_\_\_\_\_  
 A) linear B) not linear

4)  $10x + 5 = 20$  4) \_\_\_\_\_  
 A) linear B) not linear

5)  $\frac{x}{9} + 13 = 17$  5) \_\_\_\_\_  
 A) linear B) not linear

6)  $\sqrt{5}x + \pi = 0.2$  6) \_\_\_\_\_  
 A) linear B) not linear

7)  $3\sqrt{x} - 6 = 0$  7) \_\_\_\_\_  
 A) linear B) not linear

8)  $43.7x = 4.2$  8) \_\_\_\_\_  
 A) linear B) not linear

9)  $9(x - 8) = 0$  9) \_\_\_\_\_  
 A) linear B) not linear

10)  $|x + 2| = 10$  10) \_\_\_\_\_  
 A) linear B) not linear

11)  $|12x| - 7 = 14$  11) \_\_\_\_\_  
 A) linear B) not linear

12)  $6x = 8x^3$  12) \_\_\_\_\_  
 A) linear B) not linear

**Solve the equation.**

13)  $a - 3 = 7$  13) \_\_\_\_\_  
 A)  $\{-4\}$  B)  $\{10\}$  C)  $\{-10\}$  D)  $\{4\}$

14)  $x + 2 = -13$  14) \_\_\_\_\_  
 A)  $\{-11\}$  B)  $\{15\}$  C)  $\{11\}$  D)  $\{-15\}$

15)  $x + 17 = 7$  15) \_\_\_\_\_  
 A)  $\{24\}$  B)  $\{10\}$  C)  $\{-24\}$  D)  $\{-10\}$

- 16)  $4 = b - 11$   
 A) {15} B) {-15} C) {7} D) {-7} 16) \_\_\_\_\_
- 17)  $4 = b - 1$   
 A) {-3} B) {-5} C) {5} D) {3} 17) \_\_\_\_\_
- 18)  $-3 + b = 13$   
 A) {-10} B) {16} C) {10} D) {-16} 18) \_\_\_\_\_
- 19)  $\frac{1}{5} + x = 11$   
 A)  $\left\{\frac{56}{5}\right\}$  B)  $\left\{\frac{54}{5}\right\}$  C) {54} D) {2} 19) \_\_\_\_\_
- 20)  $\frac{1}{9} + x = \frac{8}{9}$   
 A)  $\left\{\frac{7}{9}\right\}$  B)  $\left\{\frac{2}{3}\right\}$  C)  $\left\{\frac{7}{8}\right\}$  D) {1} 20) \_\_\_\_\_
- 21)  $\frac{1}{5} + x = -\frac{1}{25}$   
 A)  $\left\{-\frac{1}{15}\right\}$  B)  $\left\{-\frac{2}{25}\right\}$  C)  $\left\{-\frac{31}{125}\right\}$  D)  $\left\{-\frac{6}{25}\right\}$  21) \_\_\_\_\_
- 22)  $\frac{3}{4} - x = \frac{1}{16}$   
 A)  $\left\{-\frac{1}{4}\right\}$  B)  $\left\{-\frac{53}{64}\right\}$  C)  $\left\{-\frac{13}{16}\right\}$  D)  $\left\{\frac{13}{16}\right\}$  22) \_\_\_\_\_
- 23)  $\frac{1}{4} - x + z = \frac{3}{7}$   
 A)  $\left\{\frac{19}{28}\right\}$  B)  $\left\{-\frac{19}{28}\right\}$  C)  $\left\{\frac{4}{7}\right\}$  D)  $\left\{\frac{4}{11}\right\}$  23) \_\_\_\_\_
- 24)  $6.6 + x = 18.5$   
 A) {25.1} B) {11.9} C) {24.6} D) {11.4} 24) \_\_\_\_\_
- 25)  $-19.9 - a = 28.5$   
 A) {8.6} B) {48.4} C) {- 48.4} D) {-8.6} 25) \_\_\_\_\_
- 26)  $10 + 2p = 3p$   
 A) {2} B) {-10} C) {10} D) {5} 26) \_\_\_\_\_
- 27)  $4y = 3y - 6.7$   
 A) {6.7} B) {-13.7} C) {4} D) {-6.7} 27) \_\_\_\_\_
- 28)  $22x - 6 = 10x + 30$   
 A) {3} B) {4} C) {6} D) {1} 28) \_\_\_\_\_

- 29)  $7x - 3 - 2x = 17$  29) \_\_\_\_\_  
 A) {4} B) {7} C) {5} D) {2}
- 30)  $3(y + 6) = 4(y - 5)$  30) \_\_\_\_\_  
 A) {38} B) {2} C) {-38} D) {-2}
- 31)  $4(2z - 2) = 7(z + 2)$  31) \_\_\_\_\_  
 A) {22} B) {10} C) {6} D) {-6}
- 32)  $10y = 6y + 5 + 3y$  32) \_\_\_\_\_  
 A) {50} B) {5} C) {-5} D) {-50}
- 33)  $-3a + 2 + 4a = 5 - 29$  33) \_\_\_\_\_  
 A) {-36} B) {36} C) {-26} D) {26}
- 34)  $-7b + 4 + 5b = -3b + 9$  34) \_\_\_\_\_  
 A) {-4} B) {9} C) {5} D) {-9}
- 35)  $-8.8 + 4x - 6.7 + 5x - 2.9 = 5.5 + 10x + 1.8$  35) \_\_\_\_\_  
 A) {11.1} B) {-11.1} C) {-25.7} D) {25.7}

**Use the given information to write an equation. Let x represent the number described in the exercise. Then solve the equation and find the number.**

- 36) The sum of a number and forty-four is fifty. 36) \_\_\_\_\_  
 A)  $x \div 44 = 50$ ; 2200 B)  $44x = 50$ ; 1.14  
 C)  $x + 44 = 50$ ; 6 D)  $x - 44 = 50$ ; 94
- 37) Twenty-nine increased by a number equals fifty-two. 37) \_\_\_\_\_  
 A)  $29 - x = 52$ ; -23 B)  $29x = 52$ ; 1.79 C)  $29 + x = 52$ ; 23 D)  $29 + 52 = x$ ; 81
- 38) If 271 is subtracted from a number, the result is 464. 38) \_\_\_\_\_  
 A)  $x + 464 = 271$ ; -193 B)  $x - 271 = 464$ ; 735  
 C)  $x - 271 = 464$ ; -735 D)  $x + 271 = 464$ ; 193
- 39) If 271 is added to a number, the result is 551. 39) \_\_\_\_\_  
 A)  $x - 271 = 551$ ; 822 B)  $x + 271 = 551$ ; -280  
 C)  $271 + x = 551$ ; 280 D)  $271 + x = 551$ ; -822

**Solve.**

- 40) The cost of having a car towed is given by the formula  $C = 2x + 55$ , where C is in dollars and x is the number of miles the car is towed. Find the cost of having a car towed 2 miles. 40) \_\_\_\_\_  
 A) \$49 B) \$57 C) \$4 D) \$59
- 41) The monthly cost of a certain long distance service is given by the formula  $C = 0.05t + 4.95$  where C is in dollars and t is the amount of time in minutes called in a month. Find the cost of calling long distance for 180 minutes in a month. 41) \_\_\_\_\_  
 A) \$12.95 B) \$22.95 C) \$13.95 D) \$9.00
- 42) The amount of water in a leaky bucket is given by the formula  $f = 115 - 5t$ , where f is in ounces and t is in minutes. Find the amount of water in the bucket after 5 minutes. 42) \_\_\_\_\_  
 A) 25 oz B) 110 oz C) 140 oz D) 90 oz

- 43) The altitude above sea level of an airplane just after taking off from an airport on a high plateau is given by the formula  $h = 900t + 2831$ , where  $h$  is in feet and  $t$  is the time in minutes since take-off. Find the altitude of the airplane after 9 minutes. 43) \_\_\_\_\_
- A) 10,931 ft      B) 11,031 ft      C) 10,831 ft      D) 8100 ft

**Solve the equation using the multiplication property of equality.**

44)  $\frac{1}{7}a = 0$  44) \_\_\_\_\_

A)  $\{-7\}$       B)  $\{7\}$       C)  $\{0\}$       D)  $\{1\}$

45)  $\frac{n}{5} = 10$  45) \_\_\_\_\_

A)  $\{2\}$       B)  $\{14\}$       C)  $\{15\}$       D)  $\{50\}$

46)  $\frac{n}{3} = -6$  46) \_\_\_\_\_

A)  $\{9\}$       B)  $\{-18\}$       C)  $\{-9\}$       D)  $\{18\}$

47)  $\frac{v}{-4} = 10$  47) \_\_\_\_\_

A)  $\{-40\}$       B)  $\{14\}$       C)  $\{40\}$       D)  $\{-14\}$

48)  $9x = 72$  48) \_\_\_\_\_

A)  $\{8\}$       B)  $\{63\}$       C)  $\left\{\frac{1}{8}\right\}$       D)  $\{648\}$

49)  $-20x = 0$  49) \_\_\_\_\_

A)  $\{1\}$       B)  $\{-20\}$       C)  $\{20\}$       D)  $\{0\}$

50)  $-4a = 12$  50) \_\_\_\_\_

A)  $\{-16\}$       B)  $\{16\}$       C)  $\{-3\}$       D)  $\{1\}$

51)  $-2x = -12$  51) \_\_\_\_\_

A)  $\{2\}$       B)  $\{10\}$       C)  $\{6\}$       D)  $\{-10\}$

52)  $-24x = 20$  52) \_\_\_\_\_

A)  $\left\{-\frac{6}{5}\right\}$       B)  $\left\{-\frac{5}{6}\right\}$       C)  $\left\{\frac{6}{5}\right\}$       D)  $\left\{\frac{5}{6}\right\}$

53)  $\frac{1}{8}x = -6$  53) \_\_\_\_\_

A)  $\{2\}$       B)  $\{-1\}$       C)  $\{-48\}$       D)  $\{1\}$

54)  $16 = -\frac{8}{9}x$  54) \_\_\_\_\_

A)  $\{-18\}$       B)  $\left\{-\frac{152}{9}\right\}$       C)  $\left\{-\frac{136}{9}\right\}$       D)  $\left\{-\frac{128}{9}\right\}$

55)  $\frac{9}{10}x = 45$  55) \_\_\_\_\_

A) {50}

B)  $\left\{\frac{459}{10}\right\}$

C)  $\left\{\frac{441}{10}\right\}$

D)  $\left\{\frac{81}{2}\right\}$

56)  $\frac{1}{2}d = -\frac{2}{9}$

A)  $\left\{-\frac{9}{4}\right\}$

B)  $\left\{\frac{8}{9}\right\}$

C)  $\left\{-\frac{4}{9}\right\}$

D)  $\left\{\frac{4}{9}\right\}$

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

57)  $8x + x = 90$

A) {9}

B)  $\left\{\frac{45}{4}\right\}$

C)  $\left\{\frac{91}{8}\right\}$

D) {10}

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

58)  $-5x + x = -24$

A) {7}

B) {-6}

C) {6}

D) {-7}

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

59)  $8x + 12x = 19$

A) {380}

B)  $\left\{\frac{19}{20}\right\}$

C) {-1}

D)  $\left\{\frac{20}{19}\right\}$

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

**Solve the equation.**

60)  $-z = 12$

A) {-12}

B) {12}

C) {-1}

D) {0}

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

61)  $-x = -12$

A) {0}

B) {-12}

C) {-1}

D) {12}

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

**Solve the equation using both the addition and multiplication properties of equality.**

62)  $4r + 10 = 26$

A) {12}

B) {4}

C) {16}

D) {3}

62) \_\_\_\_\_

63)  $4n - 6 = 34$

A) {36}

B) {10}

C) {14}

D) {40}

63) \_\_\_\_\_

64)  $36 = -5x + 1$

A) {8}

B) {44}

C) {-7}

D) {40}

64) \_\_\_\_\_

65)  $46 = 8x - 2$

A) {40}

B) {7}

C) {6}

D) {44}

65) \_\_\_\_\_

66)  $-4x - 25 = -53$

A) {7}

B) {-24}

C)  $\left\{\frac{39}{2}\right\}$

D) {-7}

66) \_\_\_\_\_

67)  $-8 = -2x + 8$

A) {-8}

B) {14}

C) {8}

D) {18}

67) \_\_\_\_\_

68)  $-8x = -60 + 2x$

A) {7}

B) {-6}

C) {-50}

D) {6}

68) \_\_\_\_\_

69)  $8y - 18 = 5y$

A) {6}

B)

69) \_\_\_\_\_

$$\left\{-\frac{18}{13}\right\}$$

C)  $\left\{\frac{18}{13}\right\}$

D)  $\{-6\}$

70)  $-9y - 15 = -6y$

A)  $\{-1\}$

B)  $\{-5\}$

C)  $\{5\}$

D)  $\{1\}$

70) \_\_\_\_\_

71)  $14x - 8 = 9x + 2$

A)  $\{2\}$

B)  $\{5\}$

C)  $\{3\}$

D)  $\{0\}$

71) \_\_\_\_\_

72)  $6y - 5 = -10 - 4y$

A)  $\{2\}$

B)  $\left\{-\frac{2}{15}\right\}$

C)  $\{-2\}$

D)  $\left\{-\frac{1}{2}\right\}$

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

73)  $2x - 7 = 29 - 4x$

A)  $\{-11\}$

B)  $\{6\}$

C)  $\{-18\}$

D)  $\{-6\}$

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

74)  $-8x - 5x + 3 = 8x$

A)  $\left\{\frac{1}{7}\right\}$

B)  $\{-7\}$

C)  $\left\{-\frac{3}{5}\right\}$

D)  $\left\{-\frac{1}{7}\right\}$

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

Use the given information to write an equation. Let x represent the number described in the exercise. Then solve the equation and find the number.

75) The product of three-fourths and a number is six.

A)  $\frac{3}{4} + x = 6$ ;  $\frac{21}{4}$

B)  $\frac{3}{4} - x = 6$ ;  $\frac{-21}{4}$

C)  $\frac{3}{4} = 6x$ ;  $\frac{1}{8}$

D)  $\frac{3}{4}x = 6$ ; 8

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

76) If thirty is divided by a number, the result is five.

A)  $30 - x = 5$ ; 25

B)  $\frac{30}{5} = x$ ; 6

C)  $\frac{30}{x} = 5$ ; 6

D)  $\frac{x}{30} = 5$ ; 150

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

77) A number subtracted from eighteen is four.

A)  $x - 18 = 4$ ; 22

B)  $18 - x = 4$ ; 14

C)  $18 - 4 = x$ ; 14

D)  $18 + x = 4$ ; -14

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

Solve the problem.

78)

$$t = \frac{d}{r}$$

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

The time it takes to travel a given distance at constant speed is given by the formula where t is the time, d is the distance, and r is the rate of travel. At 60 miles per hour, what distance can be traveled in 3 hours?

A) 90 mi

B) 180 mi

C) 360 mi

D) 36 mi

79)

$$t = \frac{d}{r}$$

79) \_\_\_\_\_

The time it takes to travel a given distance at constant speed is given by the formula where t is the time, d is the distance, and r is the rate of travel. At 0.3 mile per minute, what distance can be traveled in 40 minutes?

A) 2.4 mi

B) 12 mi

C) 24 mi

D) 6 mi

80)

$$f = \frac{m}{0.3038}$$

80) \_\_\_\_\_

To convert meters to feet, you can use the formula  $f = \frac{m}{0.3038}$ , where f is the distance in feet and m is the distance in meters. How many meters (to the nearest tenth) is 8 feet?

A) 24.3 m

B) 26.3 m

C) 2.6 m

D) 2.4 m

- 81) Power is the time rate of doing work and is commonly measured in watts. Power is given by the formula  $P = \frac{W}{t}$ , where P is power, W is work (in joules), and t is time in seconds. If 300 watts of power are used in 13 seconds, how much work (in joules) was done? 81) \_\_\_\_\_
- A) 390 joules                      B) 2 joules                      C) 23 joules                      D) 3900 joules
- 82) The speed of a ball dropped from a tower is given by the formula  $f = 32t$  where f is in feet per second and t is the number of seconds since the ball was dropped. Find the speed of the ball after 5 seconds. 82) \_\_\_\_\_
- A) 5 ft/sec                      B) 150 ft/sec                      C) 160 ft/sec                      D) 32 ft/sec
- 83) The formula  $C = 474x + 142$  models the data for the cost to produce x units of a product, where C is given in dollars. How many units can be produced for a cost of \$94,942? 83) \_\_\_\_\_
- A) 150 units                      B) 100 units                      C) 200 units                      D) 400 units
- 84) The weekly production cost C of manufacturing x calendars is given by  $C = 40 + 6x$ , where the variable C is in dollars. What is the cost of producing 298 calendars? 84) \_\_\_\_\_
- A) \$1828.00                      B) \$1788.00                      C) \$11,926.00                      D) \$338.00

**Solve the equation.**

- 85)  $4 - 6x = 9x - 10x - 31$  85) \_\_\_\_\_
- A)  $\left\{\frac{27}{7}\right\}$                       B) {7}                      C)  $\left\{\frac{31}{5}\right\}$                       D)  $\left\{\frac{31}{7}\right\}$
- 86)  $2x - 3x - 4x = -8 - 27$  86) \_\_\_\_\_
- A)  $\left\{\frac{27}{5}\right\}$                       B) {7}                      C)  $\left\{\frac{19}{3}\right\}$                       D) {9}
- 87)  $-2a + 3 + 3a = 11 - 20$  87) \_\_\_\_\_
- A) {12}                      B) {34}                      C) {-34}                      D) {-12}
- 88)  $-9b + 4 + 7b = -3b + 9$  88) \_\_\_\_\_
- A) {5}                      B) {-4}                      C) {-9}                      D) {9}
- 89)  $2x - 7 + 8x = 3x + 77 - 7x$  89) \_\_\_\_\_
- A) {7}                      B) {5}                      C) {6}                      D) {8}
- 90)  $-9(x + 4) = -27$  90) \_\_\_\_\_
- A) {-1}                      B) {-23}                      C) {-31}                      D) {7}
- 91)  $3(4x - 1) = 12$  91) \_\_\_\_\_
- A)  $\left\{\frac{5}{4}\right\}$                       B)  $\left\{\frac{11}{12}\right\}$                       C)  $\left\{\frac{13}{12}\right\}$                       D)  $\left\{\frac{3}{4}\right\}$
- 92)  $9x - (3x + 30) = 12$  92) \_\_\_\_\_
- A) {8}                      B) {7}                      C) {6}                      D) {9}
- 93)  $3(5t - 7) - 7 = 77$  93) \_\_\_\_\_
- A) {6}                      B) {7}                      C) {8}                      D) {9}
- 94)  $2x + 9 = 3(x + 4)$  94) \_\_\_\_\_

	A) {21}	B) {3}	C) {-21}	D) {-3}	
95)	$3(4x - 2) + 2 = 9x - 1$ A) {3}	B) {-1}	C) {1}	D) {9}	95) _____
96)	$2(y + 8) = 3(y - 4)$ A) {4}	B) {-28}	C) {-4}	D) {28}	96) _____
97)	$5(2z - 5) = 9(z + 5)$ A) {20}	B) {70}	C) {-20}	D) {25}	97) _____
98)	$5x - 1 + 6(x + 1) = -5x - 4$ A) {-5}	B) $\left\{\frac{3}{4}\right\}$	C) $\left\{-\frac{11}{10}\right\}$	D) $\left\{-\frac{9}{16}\right\}$	98) _____
99)	$4(5x - 1) - 38 = 15x - 2$ A) {8}	B) {200}	C) {40}	D) {-8}	99) _____
100)	$7 - 2(y - 8) = 3 - 4y$ A) $\left\{-\frac{13}{3}\right\}$	B) {2}	C) {6}	D) {-10}	100) _____
101)	$3(x + 4) + 5 = 5(x + 2) + 7$ A) {4}	B) {0}	C) {9}	D) {14}	101) _____
102)	$13 - 6(x + 3) = 12 - 5(x + 4)$ A) {16}	B) {3}	C) {21}	D) {11}	102) _____
103)	$-21 - (2y - 1) = 2(y - 2) + 4y$ A) {-4}	B) $\left\{-\frac{1}{2}\right\}$	C) {-2}	D) $\left\{-\frac{5}{2}\right\}$	103) _____
104)	$6x + 7(2x - 5) = -7 - 8x$ A) {1}	B) $\left\{-\frac{3}{2}\right\}$	C) $\left\{-\frac{7}{2}\right\}$	D) {-1}	104) _____
105)	$\frac{f}{4} - 3 = 1$ A) {-8}	B) {8}	C) {-16}	D) {16}	105) _____
106)	$\frac{a}{2} - \frac{1}{2} = -6$ A) {11}	B) {-13}	C) {-11}	D) {13}	106) _____
107)	$\frac{2x}{5} - \frac{x}{3} = 3$ A) {-45}	B) {-90}	C) {90}	D) {45}	107) _____
108)	$\frac{1}{4}x - \frac{3}{8}x = 2$ A) {-14}	B) {-16}	C) {14}	D) {16}	108) _____



- 109)  $\frac{6}{7} + \frac{1}{8}x = 1$  109) \_\_\_\_\_  
 A)  $\left\{\frac{8}{7}\right\}$  B)  $\left\{-\frac{35}{8}\right\}$  C)  $\left\{-\frac{40}{7}\right\}$  D)  $\left\{-\frac{8}{7}\right\}$
- 110)  $\frac{x}{3} - \frac{x}{4} = 2$  110) \_\_\_\_\_  
 A) {6} B) {8} C) {12} D)  $\{24\}$
- 111)  $\frac{x}{5} = \frac{x}{7} + \frac{3}{5}$  111) \_\_\_\_\_  
 A)  $\left\{\frac{2}{21}\right\}$  B)  $\left\{-\frac{3}{5}\right\}$  C)  $\left\{\frac{21}{2}\right\}$  D) {0}
- 112)  $\frac{3}{2} + \frac{x}{3} = \frac{7}{6}$  112) \_\_\_\_\_  
 A)  $\left\{-\frac{2}{3}\right\}$  B) {1} C)  $\{-1\}$  D)  $\left\{\frac{2}{3}\right\}$
- 113)  $\frac{17}{6}x + \frac{8}{3} = \frac{8}{3}x$  113) \_\_\_\_\_  
 A) {-16} B) {16} C) {32} D) {-32}
- 114)  $\frac{x}{2} - 7 = \frac{x}{5} + 7$  114) \_\_\_\_\_  
 A)  $\left\{\frac{21}{5}\right\}$  B)  $\left\{-\frac{140}{3}\right\}$  C)  $\left\{\frac{140}{3}\right\}$  D)  $\left\{-\frac{21}{5}\right\}$
- 115)  $\frac{5x}{3} + 2 = \frac{1}{4}$  115) \_\_\_\_\_  
 A)  $\left\{-\frac{23}{20}\right\}$  B)  $\left\{\frac{3}{5}\right\}$  C)  $\left\{-\frac{21}{20}\right\}$  D)  $\left\{\frac{1}{10}\right\}$
- 116)  $\frac{r}{3} + \frac{6}{3} = \frac{r}{6} + \frac{8}{6}$  116) \_\_\_\_\_  
 A) {-12} B) {3} C) {4} D) {-4}
- 117)  $\frac{x+6}{2} + \frac{x-2}{3} = \frac{19}{6}$  117) \_\_\_\_\_  
 A) {1} B) {19} C) {0} D)  $\left\{\frac{15}{2}\right\}$
- 118)  $1.5x + 67.2 = 11.1x$  118) \_\_\_\_\_  
 A) {-77} B) {7} C) {6.1} D) {6.2}
- 119)  $1.1 - 8.7x = -54.1 - 1.8x$  119) \_\_\_\_\_  
 A) {6.3} B) {6.6} C) {-62} D) {8}

- 120)  $1.4x - 4.8 = 0.8x - 0.9$  120) \_\_\_\_  
 A) {6.6} B) {6.5} C) {7.15} D) {-0.154}
- 121)  $0.92x + 0.96(8 - x) = 7.52$  121) \_\_\_\_  
 A) {-0.04} B) {0.04} C) {4} D) {-4}
- 122)  $0.07y + 0.15(600 - y) = 0.17y$  122) \_\_\_\_  
 A) {720} B) {22.5} C) {225} D) {360}
- 123)  $0.50x - 0.40(x + 50) = -0.34(50)$  123) \_\_\_\_  
 A) {30} B) {15} C) {40} D) {20}
- 124)  $0.16(x + 30) + 0.21(x + 55) = -15.1$  124) \_\_\_\_  
 A) {-85} B) {85} C) {25} D) {-25}

**Solve the equation. Use words or set notation to identify equations that have no solution, or equations that are true for all real numbers.**

- 125)  $2(x + 4) = 2x + 8$  125) \_\_\_\_  
 A)  $\emptyset$  B)  $\{x \mid x \text{ is a real number}\}$   
 C) {0} D) {16}
- 126)  $7(x + 2) = 7x - 28$  126) \_\_\_\_  
 A)  $\emptyset$  B) {28}  
 C)  $\{x \mid x \text{ is a real number}\}$  D) {0}
- 127)  $-7x + 4 + 5x = -2x + 9$  127) \_\_\_\_  
 A) {-4} B)  $\emptyset$   
 C) {5} D)  $\{x \mid x \text{ is a real number}\}$
- 128)  $5x + 8 - 6x - 9 = 6x - 7x - 4$  128) \_\_\_\_  
 A)  $\emptyset$  B) {-192}  
 C) {0} D)  $\{x \mid x \text{ is a real number}\}$
- 129)  $3(x - 3) - 49 = 7x - 4(x + 4)$  129) \_\_\_\_  
 A) {-33} B)  $\emptyset$   
 C)  $\{x \mid x \text{ is a real number}\}$  D) {-65}
- 130)  $12(x - 2) = 2(6x - 4) - 16$  130) \_\_\_\_  
 A)  $\emptyset$  B) {-24}  
 C)  $\{x \mid x \text{ is a real number}\}$  D) {0}
- 131)  $14(x + 1) = 28x + 28 - 14x - 14$  131) \_\_\_\_  
 A) {0} B)  $\emptyset$   
 C) {1} D)  $\{x \mid x \text{ is a real number}\}$
- 132)  $25x + 2(x + 1) = 27(x + 1) - 25$  132) \_\_\_\_  
 A)  $\emptyset$  B) {0}  
 C) {1} D)  $\{x \mid x \text{ is a real number}\}$
- 133)  $6(x + 4) + 1 = 6x + 2$  133) \_\_\_\_  
 A)  $\{x \mid x \text{ is a real number}\}$  B)  $\emptyset$   
 C) {7} D) {23}

- 134)  $3(5x - 4) - 3 = 9x - 3$  134) \_\_\_\_\_  
 A) {2} B) {-2}  
 C)  $\emptyset$  D)  $\{x \mid x \text{ is a real number}\}$
- 135)  $\frac{x}{8} - 1 = \frac{x}{8}$  135) \_\_\_\_\_  
 A)  $\emptyset$  B)  $\{x \mid x \text{ is a real number}\}$   
 C) {4} D) {0}
- 136)  $\frac{1}{2}(4x - 6) = 6\left(\frac{1}{3}x - \frac{1}{2}\right) + 10$  136) \_\_\_\_\_  
 A)  $\{x \mid x \text{ is a real number}\}$  B)  $\left\{\frac{5}{2}\right\}$   
 C) {0} D)  $\emptyset$
- 137)  $2x + 1 = 1 - x$  137) \_\_\_\_\_  
 A)  $\{x \mid x \text{ is a real number}\}$  B)  $\emptyset$   
 C) {0} D) {1}
- 138)  $\frac{2x}{5} - \frac{x}{3} + 5 = 5 + x$  138) \_\_\_\_\_  
 A)  $\emptyset$  B)  $\{x \mid x \text{ is a real number}\}$   
 C) {75} D) {0}
- 139)  $\frac{1}{4}x - \frac{3}{8}x = 3$  139) \_\_\_\_\_  
 A)  $\emptyset$  B) {24}  
 C)  $\{x \mid x \text{ is a real number}\}$  D) {-24}

**Use the given information to write an equation. Let x represent the number described in the exercise. Then solve the equation and find the number.**

- 140) Four times a number added to 7 times the number equals 55. Find the number. 140) \_\_\_\_\_  
 A)  $4x + 7x = 55$ ; 5 B)  $4(x + 7) = 55x$ ; 0.5  
 C)  $4x - 7x = 55$ ; -7.9 D)  $4x(7 + x) = 55$ ; 7.9
- 141) When 4 times a number is subtracted from 7 times the number, the result is 21. Find the number. 141) \_\_\_\_\_  
 A)  $4x(7 - x) = 21$ ; -7 B)  $4(x - 7) = 21x$ ; 0.6  
 C)  $7x - 4x = 21$ ; 7 D)  $4x + 7x = 21$ ; 3
- 142) If 3 times a number is added to -10, the result is equal to 13 times the number. Find the number. 142) \_\_\_\_\_  
 A)  $4x + (-10) = 13x$ ; 1 B)  $3x + (-10) = 13x$ ; -1  
 C)  $16x - 13x = 10$ ; 1 D)  $13(3x - 10) = -10$ ; -1
- 143) 143) \_\_\_\_\_  
 Three-fourths of a number is  $\frac{7}{8}$ . Find the number in lowest terms.  
 A)  $\frac{3}{4} = \frac{7}{8}; \frac{21}{32}$  B)  $\frac{3}{4} = \frac{7}{8}; \frac{7}{6}$  C)  $\frac{3}{4} + x = \frac{7}{8}; \frac{1}{7}$  D)  $\frac{3}{4} = \frac{7}{8}; \frac{28}{24}$

- 144) The sum of four times a number and 5 is equal to the difference of twice the number and 3. Find the number. 144) \_\_\_\_\_

- er. 144) \_\_\_\_\_
- A)  $4x + 5 = 2x + 3$ ; - 1  
 C)  $4x + 5 = 2x - 3$ ; 4
- B)  $4x + 5 = 2x - 3$ ; - 4  
 D)  $4(x + 5) = 2x - 3$ ; -  $\frac{23}{2}$

**Solve the problem.**

- 145) Forensic scientists use the lengths of certain bones to calculate the height of a person. When the femur (the bone from the knee to the hip socket) is used, the following formula applies for men:  $h = 69.09 + 2.24f$ , where  $h$  is the height and  $f$  is the length of the femur (both in centimeters). Find the height of a man with a femur measuring 61 centimeters. 145) \_\_\_\_\_
- A) 3.61 cm                      B) 130.09 cm                      C) 4351.13 cm                      D) 205.73 cm
- 146) There is a formula that gives a correspondence between women's shoe sizes in the United States and those in Italy. The formula is  $S = 2(x + 12)$ , where  $S$  is the size in Italy and  $x$  is the size in the United States. What would be the US size for an Italian size of 34? 146) \_\_\_\_\_
- A) 80                      B) 5                      C) 2.5                      D) 10
- 147) In one state, speeding fines are determined by the formula  $F = 6(x - 70) + 50$ , where  $F$  is the cost, in dollars, of the fine if a person is caught driving  $x$  miles per hour. If the fine comes to \$104, how fast was the person driving? 147) \_\_\_\_\_
- A) 79 mph                      B) 81 mph                      C) 89 mph                      D) 77 mph
- 148)  $F = \frac{9}{5}C + 32$ , 148) \_\_\_\_\_
- To convert a Fahrenheit temperature to Celsius, one formula to use is \_\_\_\_\_ where  $F$  is the Fahrenheit temperature (in degrees) and  $C$  is the Celsius temperature. What is the Celsius temperature (to the nearest degree) when Fahrenheit temperature is  $68^\circ$ ?
- A)  $154^\circ$                       B)  $129^\circ$                       C)  $20^\circ$                       D)  $34^\circ$

**Solve the formula for the specified variable.**

- 149)  $A = \frac{1}{2}bh$  for  $b$  149) \_\_\_\_\_
- A)  $b = \frac{2A}{h}$                       B)  $b = \frac{A}{2h}$                       C)  $b = \frac{Ah}{2}$                       D)  $b = \frac{h}{2A}$
- 150)  $S = 2\pi rh + 2\pi r^2$  for  $h$  150) \_\_\_\_\_
- A)  $h = \frac{S}{2\pi r} - 1$                       B)  $h = S - r$                       C)  $h = 2\pi(S - r)$                       D)  $h = \frac{S - 2\pi r^2}{2\pi r}$
- 151)  $V = \frac{1}{3}Bh$  for  $h$  151) \_\_\_\_\_
- A)  $h = \frac{3B}{V}$                       B)  $h = \frac{3V}{B}$                       C)  $h = \frac{B}{3V}$                       D)  $h = \frac{V}{3B}$
- 152)  $P = s_1 + s_2 + s_3$  for  $s_3$  152) \_\_\_\_\_
- A)  $s_3 = s_1 + s_2 - P$                       B)  $s_3 = s_1 + P - s_2$                       C)  $s_3 = P - s_1 - s_2$                       D)  $s_3 = P + s_1 + s_2$
- 153)  $F = \frac{9}{5}C + 32$  for  $C$  153) \_\_\_\_\_

$$\text{A) } C = \frac{F - 32}{9}$$

$$\text{B) } C = \frac{5}{F - 32}$$

$$\text{C) } C = \frac{5}{9}(F - 32)$$

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

$$154) d = rt \text{ for } t$$

$$\text{A) } t = \frac{d}{r}$$

$$\text{B) } t = \frac{r}{d}$$

$$\text{C) } t = dr$$

$$\text{D) } t = d - r$$

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

$$155) P = 2L + 2W \text{ for } L$$

$$\text{A) } L = \frac{P - 2W}{2}$$

$$\text{B) } L = d - 2W$$

$$\text{C) } L = P - W$$

$$\text{D) } L = \frac{P - W}{2}$$

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

**Solve the equation for y.**

$$156) 2x + y = 10$$

$$\text{A) } y = 10 - 2x$$

$$\text{B) } y = \frac{10 - x}{2}$$

$$\text{C) } y = 2x + 10$$

$$\text{D) } y = 5 - x$$

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

$$157) 13x + 7y = 5$$

$$\text{A) } y = \frac{13 + 5x}{7}$$

$$\text{B) } y = 13x - 5$$

$$\text{C) } y = \frac{5 - 13x}{7}$$

$$\text{D) } y = \frac{5 + 13x}{7}$$

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

$$158) x = 5y + 3$$

$$\text{A) } y = 5x - 3$$

$$\text{B) } y = \frac{x - 3}{5}$$

$$\text{C) } y = x - \frac{3}{5}$$

$$\text{D) } y = \frac{1}{5}x - 3$$

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

$$159) -4x + 16y = 0$$

$$\text{A) } y = -4x$$

$$\text{B) } y = \frac{x}{4}$$

$$\text{C) } y = 4x$$

$$\text{D) } y = 4x + 4$$

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

**Use the percent formula,  $A = PB$ : A is P percent of B, to solve.**

$$160) \text{ What number is 9\% of 120?}$$

$$\text{A) } 10.8$$

$$\text{B) } 1.08$$

$$\text{C) } 1080$$

$$\text{D) } 108$$

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

$$161) \text{ What number is 90\% of 20?}$$

$$\text{A) } 18$$

$$\text{B) } 180$$

$$\text{C) } 1800$$

$$\text{D) } 1.8$$

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

$$162) \text{ What number is 17\% of 130?}$$

$$\text{A) } 2210$$

$$\text{B) } 2.21$$

$$\text{C) } 22.1$$

$$\text{D) } 221$$

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

$$163) 155\% \text{ of what number is 34.1?}$$

$$\text{A) } 0.22$$

$$\text{B) } 22$$

$$\text{C) } 52.855$$

$$\text{D) } 5285.5$$

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

$$164) \text{ What percent of 2 is 0.8?}$$

$$\text{A) } 0.4\%$$

$$\text{B) } 40\%$$

$$\text{C) } 160\%$$

$$\text{D) } 1.6\%$$

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

$$165) 1236 \text{ is what percent of 309?}$$

$$\text{A) } 400\%$$

$$\text{B) } 0.4\%$$

$$\text{C) } 25\%$$

$$\text{D) } 4\%$$

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

$$166) 26\% \text{ of what number is 33.8?}$$

$$\text{A) } 1300$$

$$\text{B) } 130$$

$$\text{C) } 1.3$$

$$\text{D) } 13$$

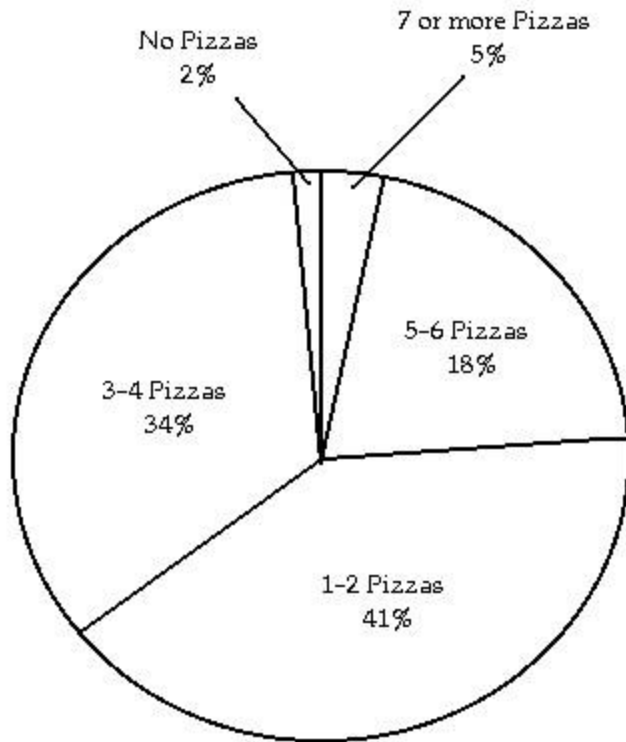
166) \_\_\_\_\_

- 167) What percent of 7.5 is 0.6? 167) \_\_\_\_  
 A) 80% B) 4% C) 0.8% D) 8%
- 168) 60 is 20% of what number? 168) \_\_\_\_  
 A) 3000 B) 30 C) 12 D) 300
- 169) 21 is 2% of what number? 169) \_\_\_\_  
 A) 1050 B) 42 C) 105 D) 10,500
- 170) 10% of what number is 74? 170) \_\_\_\_  
 A) 74 B) 740 C) 7400 D) 7.4

**Solve the problem.**

- 171) Jeans are on sale at the local department store for 15% off. If the jeans originally cost \$62, find the sale price. (Round to the nearest cent, if necessary.) 171) \_\_\_\_  
 A) \$52.70 B) \$61.07 C) \$71.30 D) \$9.30
- 172) Sales at a local ice cream shop went up 70% in 5 years. If 40,000 ice cream cones were sold in the current year, find the number of ice cream cones sold 5 years ago. (Round to the nearest integer, if necessary.) 172) \_\_\_\_  
 A) 23,529 ice cream cones B) 57,143 ice cream cones  
 C) 12,000 ice cream cones D) 28,000 ice cream cones
- 173) Attendance this year at the homecoming football game is 151% of what it was last year. If last year's homecoming football game attendance was 20,000, what is this year's attendance? (Round to the nearest integer, if necessary.) 173) \_\_\_\_  
 A) 302,000 people B) 30,200 people C) 7550 people D) 132 people
- 174) Of the 50 students in an algebra class, 9 of them received an F on the mid-term exam. What percent of the algebra students received an F on the exam? (Round to the nearest tenth of a percent, if necessary.) 174) \_\_\_\_  
 A) 18% B) 55.6% C) 5.6% D) 180%
- 175) 9% of students at a university attended a lecture. If 2000 students are enrolled at the university, about how many students attended the lecture? 175) \_\_\_\_  
 A) 18 students B) 1800 students C) 18,000 students D) 180 students

**The pie chart below shows the number of pizzas consumed by college students in a typical month. Use the chart to answer the question.**



- 176) What percent of college students consume 1-2 pizzas in a typical month? 176) \_\_\_\_  
 A) 2% B) 41% C) 18% D) 34%
- 177) What percent of college students consume no pizzas in a typical month? 177) \_\_\_\_  
 A) 34% B) 5% C) 18% D) 2%
- 178) What percent of college students consume 3 or more pizzas in a typical month? 178) \_\_\_\_  
 A) 52% B) 98% C) 57% D) 34%
- 179) What percent of college students consume 4 pizzas or less in a typical month? 179) \_\_\_\_  
 A) 43% B) 82% C) 77% D) 75%
- 180) If State University has approximately 24,000 students, about how many would you expect to consume 5-6 pizzas in a typical month? 180) \_\_\_\_  
 A) 432 students B) 8160 students C) 4320 students D) 816 students

**Solve the problem.**

- 181) Due to a lack of funding, the number of students enrolled at City College went from 6000 last year to 5000 this year. Find the percent decrease in enrollment. (Round to the nearest tenth of a percent, if necessary.) 181) \_\_\_\_  
 A) 83.3% B) 16.7% C) 20% D) 120%
- 182) If 8 is increased to 11, the increase is what percent of the original number? 182) \_\_\_\_  
 A) 3.75% B) 0.00375% C) 37.5% D) 0.375%
- 183) If 25 is decreased to 20, the decrease is what percent of the original number? 183) \_\_\_\_  
 A) 0.002% B) 2% C) 20% D) 0.2%

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

- 184) The product of 13 and a number, added to 12. 184) \_\_\_\_  
 A)  $12 + 13x$  B)  $13 + 12x$  C)  $156 + x$  D)  $156x$
- 185) Nine times a number, decreased by 64. 185) \_\_\_\_  
 A)  $9(x - 64)$  B)  $9x + 64$  C)  $9x - 64$  D)  $9(x + 64)$
- 186) The quotient of 30 and the product of a number and -6. 186) \_\_\_\_  
 A)  $\frac{30}{x} - 6$  B)  $\frac{-6x}{30}$  C)  $-180x$  D)  $\frac{30}{-6x}$
- 187) The product of -15 and the sum of a number and 21. 187) \_\_\_\_  
 A)  $-15x + 21$  B)  $-15(x + 21)$  C)  $-15 + 21x$  D)  $-315x$
- 188) Five times the sum of a number and -25. 188) \_\_\_\_  
 A)  $5x - (-25)$  B)  $5(x + (-25))$  C)  $5x + (-25)$  D)  $5 + x + (-25)$
- 189) The quotient of 40 times a number and -2. 189) \_\_\_\_  
 A)  $40x + 2$  B)  $\frac{1}{-80x}$  C)  $40x - 2$  D)  $\frac{40x}{-2}$
- 190) Seven times a number decreased by one-half of the same number. 190) \_\_\_\_  
 A)  $7x - \frac{x}{2}$  B)  $7(x - \frac{1}{2})$  C)  $\frac{x}{2} - 7x$  D)  $7x - \frac{1}{2}$

**Let x represent the number. Use the given conditions to write an equation. Solve the equation and find the number.**

- 191) Four times a number added to 9 times the number equals 39. Find the number. 191) \_\_\_\_  
 A)  $4x(9 + x) = 39$ ; 4.3 B)  $4(x + 9) = 39x$ ; 1  
 C)  $4x - 9x = 39$ ; -4.3 D)  $4x + 9x = 39$ ; 3
- 192) When 4 times a number is subtracted from 7 times the number, the result is 33. Find the number. 192) \_\_\_\_  
 A)  $7x - 4x = 33$ ; 11 B)  $4x(7 - x) = 33$ ; -11  
 C)  $4(x - 7) = 33x$ ; 1 D)  $4x + 11x = 33$ ; 3
- 193) If 3 times a number is added to -7, the result is equal to 10 times the number. Find the number. 193) \_\_\_\_  
 A)  $10(3x - 7) = -7$ ; -1 B)  $13x - 10x = 7$ ; 1  
 C)  $3x + (-7) = 10x$ ; -1 D)  $4x + (-7) = 10x$ ; 1
- 194) Three-fourths of a number is  $\frac{5}{6}$ . Find the number in lowest terms. 194) \_\_\_\_  
 A)  $\frac{3}{4}x = \frac{5}{6} \cdot \frac{5}{8}$  B)  $\frac{3}{4} + x = \frac{5}{6} \cdot \frac{1}{10}$  C)  $\frac{3}{4}x = \frac{5}{6} \cdot \frac{10}{9}$  D)  $\frac{3}{4}x = \frac{5}{6} \cdot \frac{20}{18}$
- 195) The sum of four times a number and 10 is equal to the difference of twice the number and 6. Find the number. 195) \_\_\_\_  
 A)  $4x + 10 = 2x - 6$ ; 8 B)  $4x + 10 = 2x - 6$ ; -8  
 C)  $4x + 10 = 2x + 6$ ; -2 D)  $4(x + 10) = 2x - 6$ ; -23

**Solve the problem.**

- 196) 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 \$200,000, find each worker's salary. 196) \_\_\_\_  
 A) president's salary = \$150,000; department head's salary = \$50,000

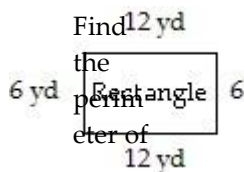


- B) president's salary = \$50,000; department head's salary = \$150,000
- C) president's salary = \$100,000; department head's salary = \$50,000
- D) president's salary = \$15,000; department head's salary = \$5000

- 197) 30 marbles are to be divided into three bags so that the second bag has three times as many marbles as the first bag and the third bag has twice as many as the first bag. If  $x$  is the number of marbles in the first bag, find the number of marbles in each bag. 197) \_\_\_\_\_
- A) 1st bag = 6 marbles; 2nd bag = 14 marbles; 3rd bag = 10 marbles
  - B) 1st bag = 5 marbles; 2nd bag = 10 marbles; 3rd bag = 15 marbles
  - C) 1st bag = 6 marbles; 2nd bag = 18 marbles; 3rd bag = 12 marbles
  - D) 1st bag = 5 marbles; 2nd bag = 15 marbles; 3rd bag = 10 marbles
- 198) A promotional deal for long distance phone service charges a \$15 basic fee plus \$0.05 per minute for all calls. If Joe's phone bill was \$64 under this promotional deal, how many minutes of phone calls did he make? Round to the nearest integer, if necessary. 198) \_\_\_\_\_
- A) 1580 minutes
  - B) 2 minutes
  - C) 980 minutes
  - D) 10 minutes
- 199) Two angles are complementary if their sum is  $90^\circ$ . If the measure of the first angle is  $x^\circ$ , and the measure of the second angle is  $(3x - 2)^\circ$ , find the measure of each angle. 199) \_\_\_\_\_
- A) 1st angle =  $31^\circ$ ; 2nd angle =  $59^\circ$
  - B) 1st angle =  $22^\circ$ ; 2nd angle =  $68^\circ$
  - C) 1st angle =  $22^\circ$ ; 2nd angle =  $64^\circ$
  - D) 1st angle =  $23^\circ$ ; 2nd angle =  $67^\circ$
- 200) Rooms in Dormitory A each have 132 square feet of floor space. These rooms have twice as much floor space as each room in Dormitory B. About how much floor space does a room in Dormitory B have? 200) \_\_\_\_\_
- A) 66 sq. feet
  - B) 134 sq. feet
  - C) 264 sq. feet
  - D) 130 sq. feet
- 201) An isosceles triangle contains two angles of the same measure. If the measure of the third angle is  $54^\circ$  less than the measure of either of the other two identical angles, find the measure of one of the identical angles. (Hint: The sum of the angles of a triangle is  $180^\circ$ .) 201) \_\_\_\_\_
- A)  $117^\circ$
  - B)  $24^\circ$
  - C)  $58^\circ$
  - D)  $78^\circ$
- 202) There are 24 more sophomores than juniors in an algebra class. If there are 88 students in this class, find the number of sophomores and the number of juniors in the class. 202) \_\_\_\_\_
- A) 32 sophomores; 56 juniors
  - B) 112 sophomores; 64 juniors
  - C) 88 sophomores; 64 juniors
  - D) 56 sophomores; 32 juniors
- 203) A car rental agency advertised renting a luxury, full-size car for \$24.95 per day and \$0.49 per mile. If you rent this car for 5 days, how many whole miles can you drive if you only have \$200 to spend? 203) \_\_\_\_\_
- A) 38 miles
  - B) 153 miles
  - C) 347 miles
  - D) 40 miles
- 204) A 10-ft. board is cut into 2 pieces so that one piece is 6 feet longer than 3 times the shorter piece. If the shorter piece is  $x$  feet long, find the lengths of both pieces. 204) \_\_\_\_\_
- A) shorter piece: 18 ft; longer piece: 36 ft.
  - B) shorter piece: 1 ft; longer piece: 9 ft.
  - C) shorter piece: 24 ft; longer piece: 30 ft.
  - D) shorter piece: 5 ft; longer piece: 30 ft.

Use a formula for perimeter or area to solve the problem.

205)



the figure.

205)

A) 18 yd

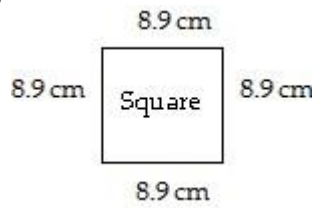
B) 12 yd

C) 36 yd

D) 24 yd

\_\_\_\_  
-

206)



Find the perimeter of the figure.

A) 35.6 cm

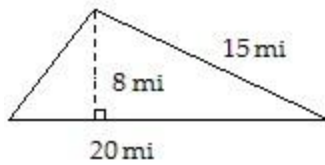
B) 158.42 cm

C) 45.6 cm

D) 17.8 cm

206) \_\_\_\_

207)



Find the area of the triangle.

A) 160 mi<sup>2</sup>

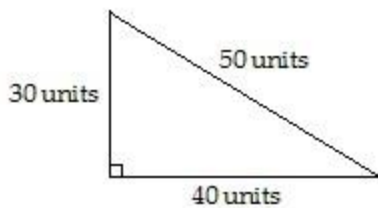
B) 150 mi<sup>2</sup>

C) 80 mi<sup>2</sup>

D) 60 mi<sup>2</sup>

207) \_\_\_\_

208)



Find the area of the triangle.

A) 600 units<sup>2</sup>

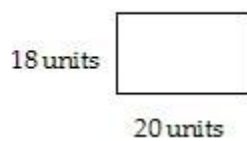
B) 120 units<sup>2</sup>

C) 750 units<sup>2</sup>

D) 1200 units<sup>2</sup>

208) \_\_\_\_

209)



Find the area of the rectangle.

A) 360 units<sup>2</sup>

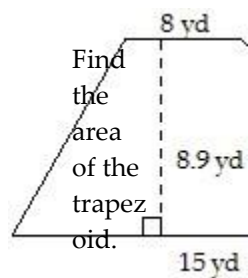
B) 38 units<sup>2</sup>

C) 76 units<sup>2</sup>

D) 3600 units<sup>2</sup>

209) \_\_\_\_

210)

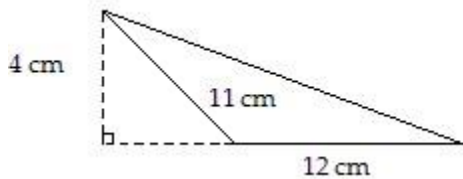


- 210) \_\_\_\_\_
- A)  $102.35 \text{ yd}^2$       B)  $71.2 \text{ yd}^2$       C)  $133.5 \text{ yd}^2$       D)  $204.7 \text{ yd}^2$
- 211) \_\_\_\_\_



Find the area of the square.

- A)  $49 \text{ cm}^2$       B)  $28 \text{ cm}^2$       C)  $11 \text{ cm}^2$       D)  $14 \text{ cm}^2$
- 212) \_\_\_\_\_



Find the area of the triangle.

- A)  $40 \text{ cm}^2$       B)  $22 \text{ cm}^2$       C)  $48 \text{ cm}^2$       D)  $24 \text{ cm}^2$
- 213) The length of a rectangle is 149 in. and the width is 82 in. Find its perimeter.      213) \_\_\_\_\_
- A) 462 in.      B) 231 in.      C) 12,218 in.      D) 380 in.

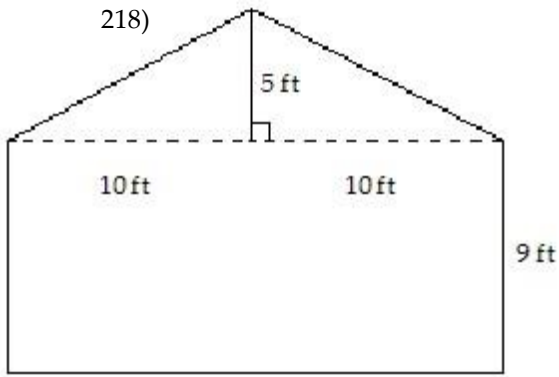
- 214) The width of a room is 6 feet, and the area of the room is 78 square feet. Find the room's length.      214) \_\_\_\_\_
- A) 13 feet      B) 72 feet      C) 468 feet      D) 33 feet

### Solve.

- 215) To trim the edges of a rectangular table cloth, 60 feet of lace are needed. The length of the table cloth is exactly one-half its width. What are the dimensions of the table cloth?      215) \_\_\_\_\_
- A) length: 5 feet; width: 10 feet      B) length: 10 feet; width: 20 feet  
C) length: 20 feet; width: 10 feet      D) length: 20 feet; width: 40 feet
- 216) A rectangular carpet has a perimeter of 162 inches. The length of the carpet is 63 inches more than the width. What are the dimensions of the carpet?      216) \_\_\_\_\_
- A) 76.5 by 81 inches      B) 72 by 81 inches  
C) 72 by 9 inches      D) 45 by 54 inches
- 217) The length of a rectangular room is 2 feet longer than twice the width. If the room's perimeter is 124 feet, what are the room's dimensions?      217) \_\_\_\_\_
- A) Width = 30 ft; length = 32 ft      B) Width = 40 ft; length = 84 ft  
C) Width = 25 ft; length = 52 ft      D) Width = 20 ft; length = 42 ft

218)

218)



The drawing shows the end of a building that is to be bricked. If the area of the side of a brick used is  $\frac{1}{6}$  sq. ft, find the number of bricks needed to completely cover the side of the building.

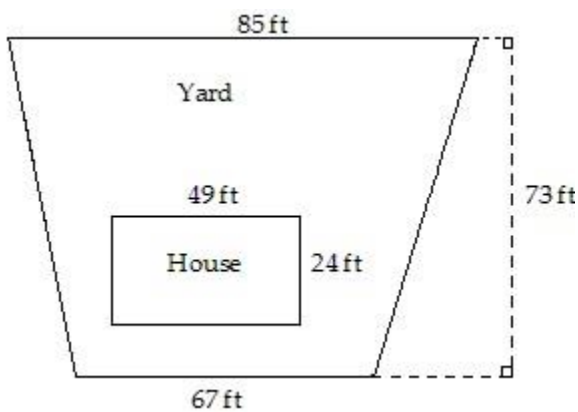
A) 38 bricks

B) 1680 bricks

C) 230 bricks

D) 1380 bricks

219)



A homeowner wants to know how much grass seed to buy. First the size of the yard must be

determine how many square feet are in the yard. Use the drawing to determine how many

219)

A)  $4372 \text{ ft}^2$

B)  $5029 \text{ ft}^2$

C)  $9920 \text{ ft}^2$

D)  $5548 \text{ ft}^2$

Use the formula for the area or circumference of a circle to solve the problem. Where applicable, express answers in terms of  $\pi$ .

220)

220) \_\_\_\_\_



Find the area of the circle.

A)  $6\pi \text{ in.}^2$

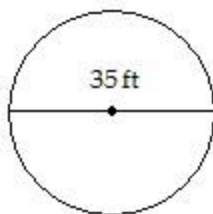
B)  $9\pi \text{ in.}^2$

C)  $12\pi \text{ in.}^2$

D)  $7\pi \text{ in.}^2$

221)

221) \_\_\_\_\_



Give the exact circumference.

A)  $70\pi \text{ ft}$

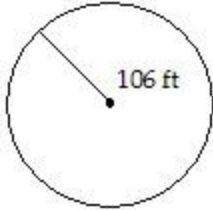
B)  $1225\pi \text{ ft}$

C)  $35\pi \text{ ft}$

D)  $17.5\pi \text{ ft}$

222)

222) \_\_\_\_\_



Give the exact circumference.

A)  $212\pi \text{ ft}$

B)  $53\pi \text{ ft}$

C)  $11,236\pi \text{ ft}$

D)  $106\pi \text{ ft}$

223) The circumference of a circle is  $10\pi$  meters. Find the circle's radius.

223) \_\_\_\_\_

A)  $\pi \text{ m}$

B)  $5\pi \text{ m}$

C)  $5 \text{ m}$

D)  $10 \text{ m}$

224) The circumference of a circle is  $20\pi$  meters. Find the circle's diameter.

224) \_\_\_\_\_

A)  $20 \text{ m}$

B)  $\pi \text{ m}$

C)  $10 \text{ m}$

D)  $10\pi \text{ m}$

**Solve.**

225) Which one of the following is a better buy: a 12-inch pizza for \$14 or two 8-inch pizzas for \$13.

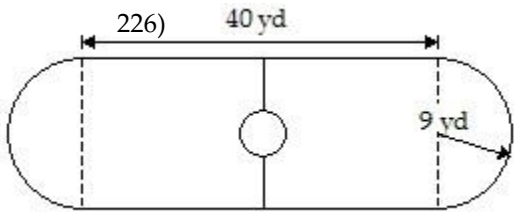
225) \_\_\_\_\_

A) two 8-in. pizzas

B) 12-in. pizza

C) equivalent buys

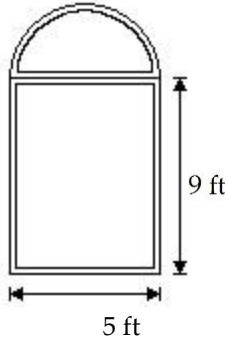
226) Find the area of the skating rink. Use  $\pi = 3.14$  and round to the nearest tenth.



- A) 974.3 sq. yd      B) 868.7 sq. yd      C) 1228.7 sq. yd      D) 614.3 sq. yd

227) Find the area of the window. Use  $\pi = 3.14$  and round to the nearest tenth.

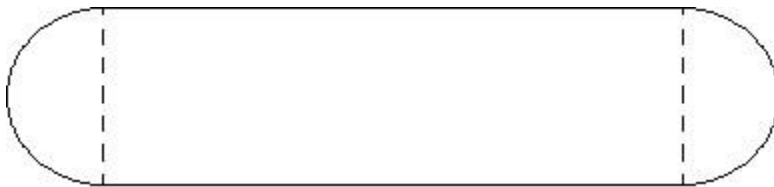
227) \_\_\_\_\_



- A) 47 sq. ft      B) 123.5 sq. ft      C) 84.3 sq. ft      D) 54.8 sq. ft

228) The rectangular part of the field shown below is 131 yd long and the diameter of each semicircle is 12 yd. Find the cost of fertilizing the field at \$0.35 per square yard. Use  $\pi = 3.14$  and round to the nearest cent.

228) \_\_\_\_\_

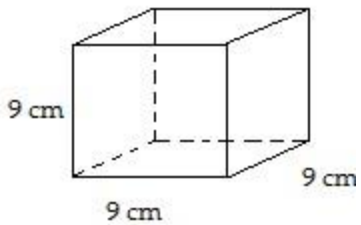


- A) \$314.66      B) \$556.79      C) \$589.76      D) \$708.46

Find the volume of the figure. Where applicable, express answers in terms of  $\pi$ .

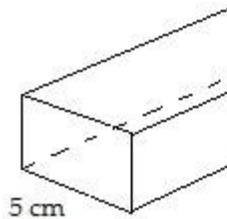
229)

229) \_\_\_\_\_

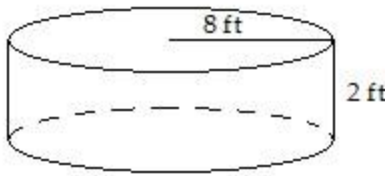


- A) 81 cm<sup>3</sup>      B) 27 cm<sup>3</sup>      C) 729 cm<sup>3</sup>      D) 162 cm<sup>3</sup>

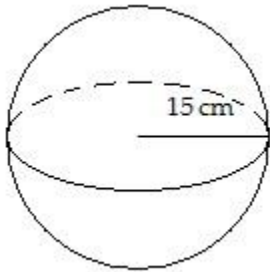
230)



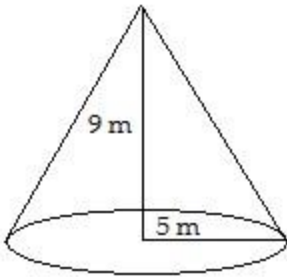
- 230) \_\_\_\_\_
- A)  $300 \text{ cm}^3$       B)  $1125 \text{ cm}^3$       C)  $100 \text{ cm}^3$       D)  $240 \text{ cm}^3$
- 231) \_\_\_\_\_



- A)  $128\pi \text{ ft}^3$       B)  $16\pi \text{ ft}^3$       C)  $64\pi \text{ ft}^3$       D)  $128 \text{ ft}^3$
- 232) \_\_\_\_\_



- A)  $4500\pi \text{ cm}^3$       B)  $3375\pi \text{ cm}^3$       C)  $13,500\pi \text{ cm}^3$       D)  $500\pi \text{ cm}^3$
- 233) \_\_\_\_\_



- A)  $15\pi \text{ m}^3$       B)  $75\pi \text{ m}^3$       C)  $45\pi \text{ m}^3$       D)  $225\pi \text{ m}^3$

**Solve.**

- 234) A water reservoir is shaped like a rectangular solid with a base that is 7 meters by 2 meters, and a vertical height of 3 meters. How much water is in the reservoir if it is completely full? 234) \_\_\_\_\_
- A)  $42 \text{ m}^3$       B)  $147 \text{ m}^3$       C)  $28 \text{ m}^3$       D)  $18 \text{ m}^3$
- 235) Find the volume of an aluminum can that has a radius of 2.5 centimeters and a height of 15 centimeters. Use  $\pi = 3.14$  and round to the nearest tenth. 235) \_\_\_\_\_
- A)  $294.4 \text{ cm}^3$       B)  $235.5 \text{ cm}^3$       C)  $1177.5 \text{ cm}^3$       D)  $117.8 \text{ cm}^3$
- 236) The outside of a water storage tank is in the shape of a sphere. If the radius is 12.6 feet, approximate the volume of the tank in cubic feet. Use  $\pi = 3.14$  and round to the nearest hundredth, if necessary. 236) \_\_\_\_\_
- A)  $6281.18 \text{ ft}^3$       B)  $664.68 \text{ ft}^3$       C)  $8374.91 \text{ ft}^3$       D)  $498.51 \text{ ft}^3$

**Use the relationship among the three angles of any triangle to solve the problem.**

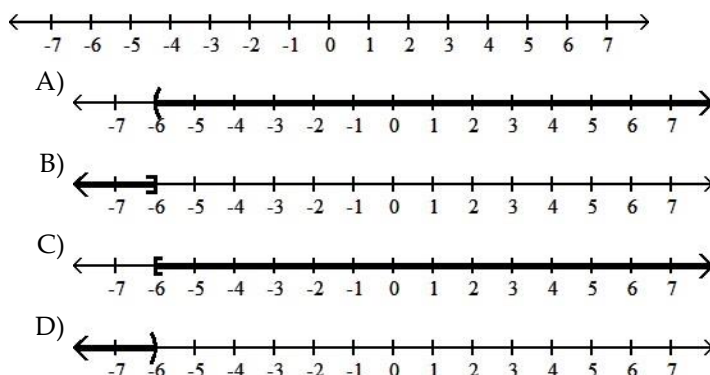
- 237) Two angles of a triangle are  $10^\circ$  and  $40^\circ$ . Find the third angle. 237) \_\_\_\_\_  
 A)  $40^\circ$  B)  $50^\circ$  C)  $130^\circ$  D)  $310^\circ$
- 238) Two angles of a triangle are  $13^\circ$  and  $11^\circ$ . Find the third angle. 238) \_\_\_\_\_  
 A)  $336^\circ$  B)  $156^\circ$  C)  $66^\circ$  D)  $24^\circ$
- 239) One of the base angles of an isosceles triangle is  $26^\circ$ . Find the measures of the other two angles. 239) \_\_\_\_\_  
 (An isosceles triangle has two equal base angles.)  
 A)  $26^\circ, 128^\circ$  B)  $26^\circ, 308^\circ$  C)  $26^\circ, 38^\circ$  D)  $26^\circ, 52^\circ$
- 240) One angle of a triangle is 2 times as large as another. The measure of the third angle is  $100^\circ$  greater than that of the smallest angle. Find the measure of each angle. 240) \_\_\_\_\_  
 A)  $20^\circ, 40^\circ, 120^\circ$  B)  $30^\circ, 60^\circ, 90^\circ$  C)  $20^\circ, 40^\circ, 100^\circ$  D)  $25^\circ, 50^\circ, 105^\circ$
- 241) A triangle has angles of  $(4x)^\circ$ ,  $(3x + 8)^\circ$ , and  $(2x + 19)^\circ$ . Find the measure of each angle. 241) \_\_\_\_\_  
 A)  $53^\circ, 59^\circ, 68^\circ$  B)  $53^\circ, 51^\circ, 68^\circ$  C)  $17^\circ, 53^\circ, 68^\circ$  D)  $17^\circ, 59^\circ, 68^\circ$

**Find the measure of the indicated angle.**

- 242) Find the measure of the complement of  $18^\circ$ . 242) \_\_\_\_\_  
 A)  $252^\circ$  B)  $162^\circ$  C)  $72^\circ$  D)  $342^\circ$
- 243) Find the measure of the supplement of  $21^\circ$ . 243) \_\_\_\_\_  
 A)  $69^\circ$  B)  $159^\circ$  C)  $249^\circ$  D)  $339^\circ$
- 244) Find the measure of the supplement of  $125^\circ$ . 244) \_\_\_\_\_  
 A)  $235^\circ$  B)  $145^\circ$  C) not possible D)  $55^\circ$
- 245) The angle's measure is  $70^\circ$  more than that of its complement. 245) \_\_\_\_\_  
 A)  $125^\circ$  B)  $80^\circ$  C)  $55^\circ$  D)  $10^\circ$
- 246) The angle's measure is  $20^\circ$  more than that of its supplement. 246) \_\_\_\_\_  
 A)  $100^\circ$  B)  $55^\circ$  C)  $80^\circ$  D)  $35^\circ$
- 247) The angle's measure is  $80^\circ$  more than triple that of its supplement. 247) \_\_\_\_\_  
 A)  $115^\circ$  B)  $70^\circ$  C)  $155^\circ$  D)  $110^\circ$

**Graph the solution of the inequality on a number line.**

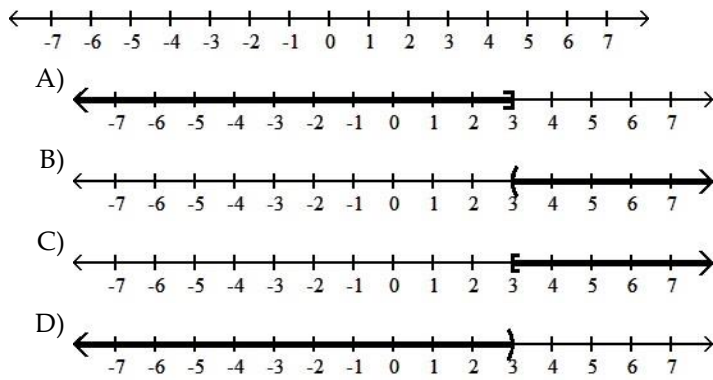
- 248)  $x > -6$  248) \_\_\_\_\_





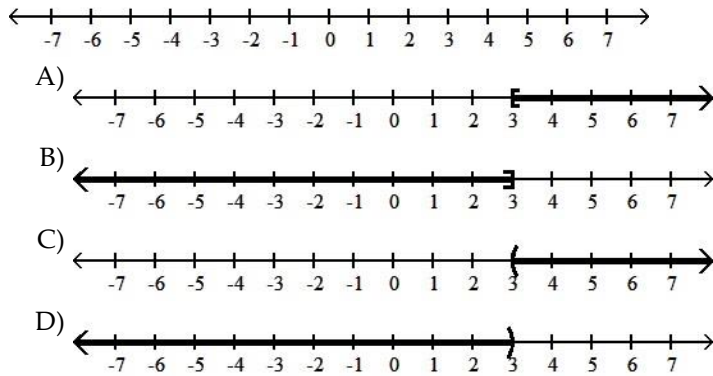
249)  $x < 3$

249) \_\_\_\_\_



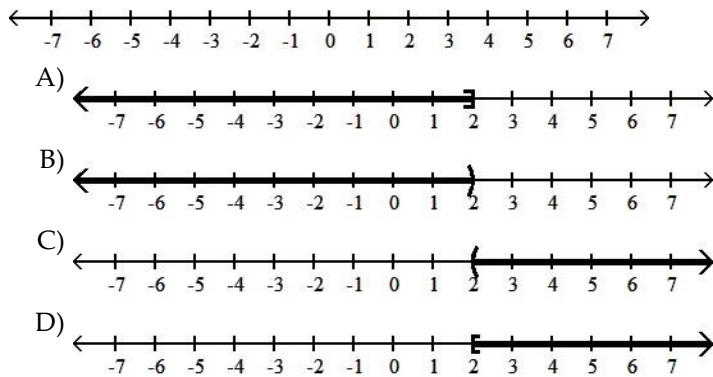
250)  $x \geq 3$

250) \_\_\_\_\_



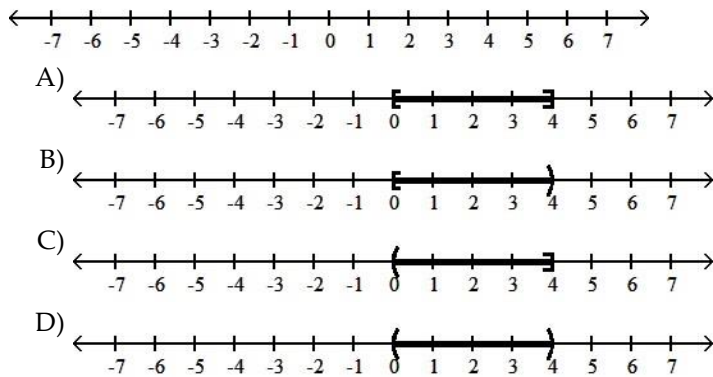
251)  $x \leq 2$

251) \_\_\_\_\_



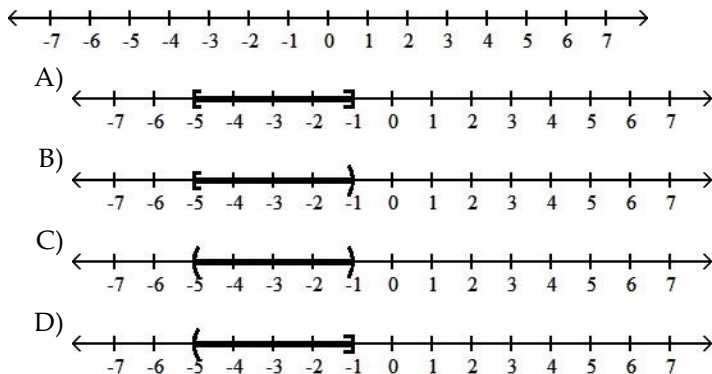
252)  $0 \leq x \leq 4$

252) \_\_\_\_\_



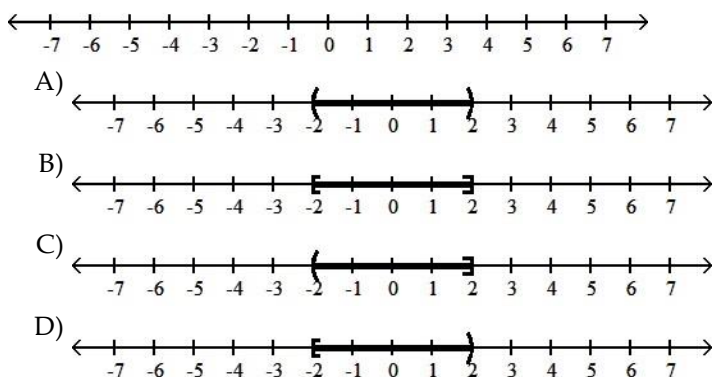
253)  $-5 < x < -1$

253) \_\_\_\_\_



254)  $-2 \leq x < 2$

254) \_\_\_\_\_



Express the solution set of the inequality in interval notation.

255)  $x \geq 5$

255) \_\_\_\_\_

- A)  $(-\infty, 5)$       B)  $(-\infty, 5]$       C)  $[5, \infty)$       D)  $(5, \infty)$

256)  $x > 22$

256) \_\_\_\_\_

- A)  $[22, \infty)$       B)  $(-\infty, 22)$       C)  $(-\infty, 22]$       D)  $(22, \infty)$

257)  $x > -6$

257) \_\_\_\_\_

- A)  $[-6, \infty)$       B)  $(-\infty, -6)$       C)  $(-\infty, -6]$       D)  $(-6, \infty)$

258)  $x \geq -18$

258) \_\_\_\_\_

- A)  $(-18, \infty)$       B)  $[-18, \infty)$       C)  $(-\infty, -18)$       D)  $(-\infty, -18]$

259)  $x < 8$

259) \_\_\_\_\_

- A)  $(-\infty, 8)$       B)  $(8, \infty)$       C)  $(-\infty, 8]$       D)  $[8, \infty)$

260)  $x \leq 14$

260) \_\_\_\_\_

- A)  $(-\infty, 14)$       B)  $[14, \infty)$       C)  $(14, \infty)$       D)  $(-\infty, 14]$

261)  $x \leq -6$

261) \_\_\_\_\_

- A)  $(-\infty, -6)$       B)  $[-6, \infty)$       C)  $(-6, \infty)$       D)  $(-\infty, -6]$

262)  $x < -21$

262) \_\_\_\_\_

- A)  $[-21, \infty)$       B)  $(-21, \infty)$       C)  $(-\infty, -21]$       D)  $(-\infty, -21)$

263)  $\frac{5}{4}$

263) \_\_\_\_\_

$x <$

A)  $\left(\frac{5}{4}, \infty\right)$

B)  $\left[-\infty, \frac{5}{4}\right]$

C)  $\left(-\infty, \frac{5}{4}\right)$

D)  $\left[\frac{5}{4}, \infty\right)$

264)  $\frac{5}{6}$

264) \_\_\_\_\_

$x \geq$

A)  $\left(-\infty, \frac{5}{6}\right)$

B)  $\left[-\infty, \frac{5}{6}\right]$

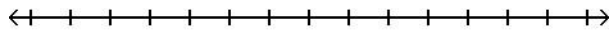
C)  $\left[\frac{5}{6}, \infty\right)$

D)  $\left(\frac{5}{6}, \infty\right)$

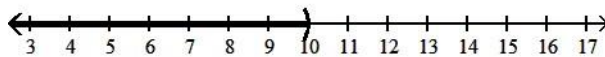
Use the addition property of inequality to solve the inequality and graph the solution set on a number line.

265)  $x + 2 \leq 8$

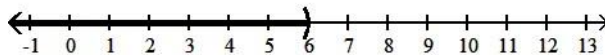
265) \_\_\_\_\_



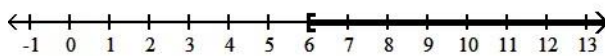
A)  $(-\infty, 10)$



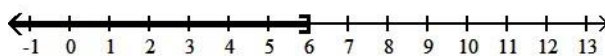
B)  $(-\infty, 6)$



C)  $[6, \infty)$

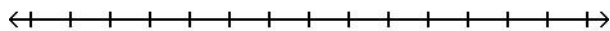


D)  $(-\infty, 6]$

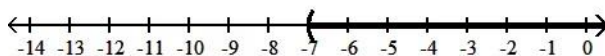


266)  $x - 7 \geq -14$

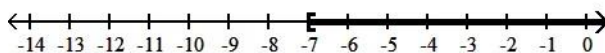
266) \_\_\_\_\_



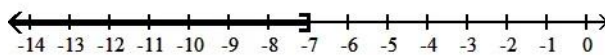
A)  $(-7, \infty)$



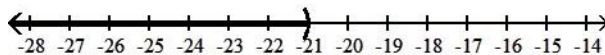
B)  $[-7, \infty)$



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

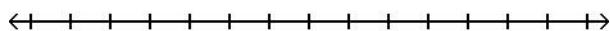


D)  $(-\infty, -21)$

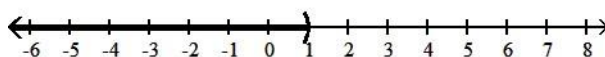


267)  $x + 5 < 6$

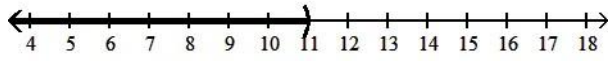
267) \_\_\_\_\_



A)  $(-\infty, 1)$



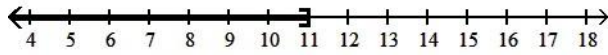
B)  $(-\infty, 11)$



C)  $(1, \infty)$

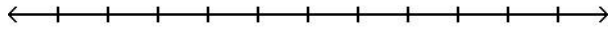


D)  $(-\infty, 11]$

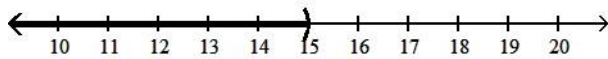


268)  $10 - x > -5$

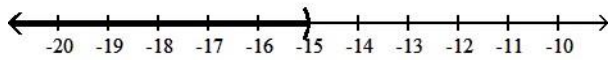
268) \_\_\_\_\_



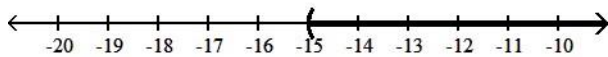
A)  $(-\infty, 15)$



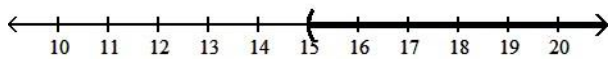
B)  $(-\infty, -15)$



C)  $(-15, \infty)$

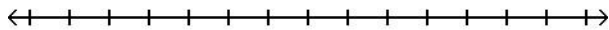


D)  $(15, \infty)$

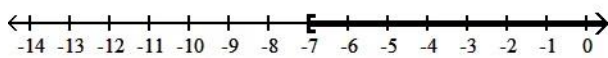


269)  $8x + 2 > 7x - 5$

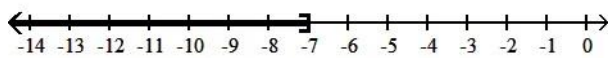
269) \_\_\_\_\_



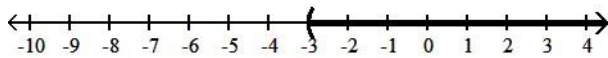
A)  $[-7, \infty)$



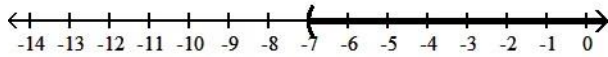
B)  $(-\infty, -7]$



C)  $(-3, \infty)$

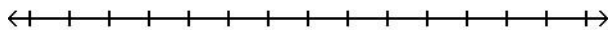


D)  $(-7, \infty)$

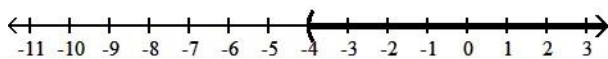


270)  $3x - 3 \geq 2x - 7$

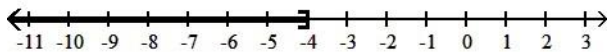
270) \_\_\_\_\_



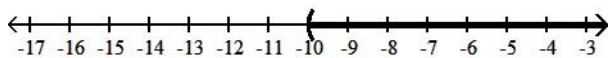
A)  $(-4, \infty)$



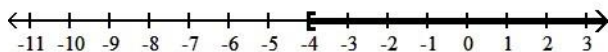
B)  $(-\infty, -4]$



C)  $(-10, \infty)$

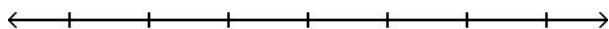


D)  $[-4, \infty)$

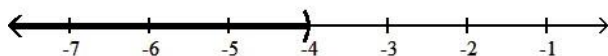


271)  $-6x - 6 > -7x - 10$

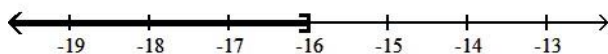
271) \_\_\_\_\_



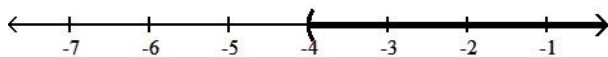
A)  $(-\infty, -4)$



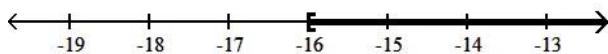
B)  $(-\infty, -16]$



C)  $(-4, \infty)$

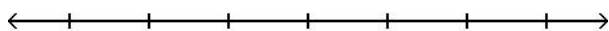


D)  $[-16, \infty)$



272)  $4x + 6 \leq 3x + 13$

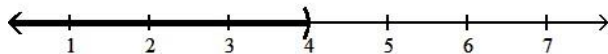
272) \_\_\_\_\_



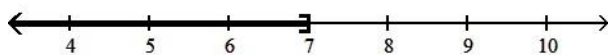
A)  $(4, \infty)$



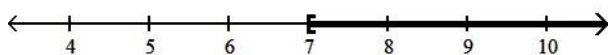
B)  $(-\infty, 4)$



C)  $(-\infty, 7]$



D)  $[7, \infty)$

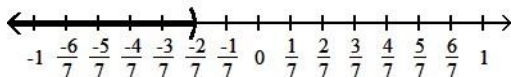


273)  $x + \frac{2}{21} > \frac{8}{21}$

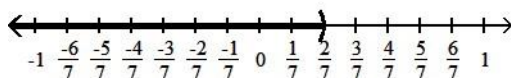
273) \_\_\_\_\_



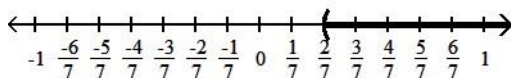
A)  $\left(-\infty, -\frac{2}{7}\right)$



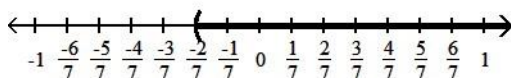
B)  $\left(-\infty, \frac{2}{7}\right)$



C)  $\left(\frac{2}{7}, \infty\right)$



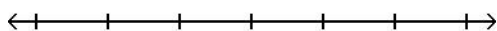
D)  $\left(-\frac{2}{7}, \infty\right)$



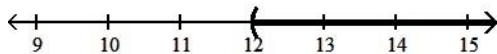
Use the multiplication property of inequality to solve the inequality and graph the solution set on a number line.

274)  $\frac{x}{2} \geq 6$

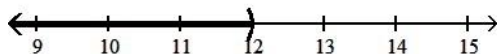
274) \_\_\_\_\_



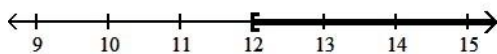
A)  $(12, \infty)$



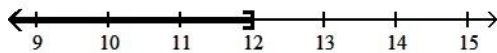
B)  $(-\infty, 12)$



C)  $[12, \infty)$

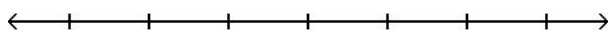


D)  $(-\infty, 12]$

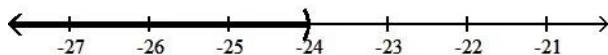


275)  $\frac{y}{6} \leq -4$

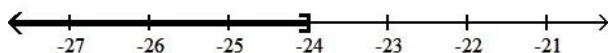
275) \_\_\_\_\_



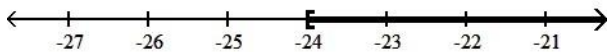
A)  $(-\infty, -24)$



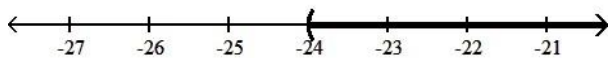
B)  $(-\infty, -24]$



C)  $[-24, \infty)$

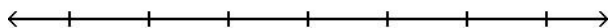


D)  $(-24, \infty)$

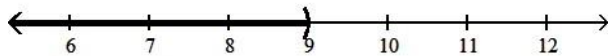


276)  $\frac{y}{3} > 3$

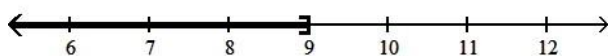
276) \_\_\_\_\_



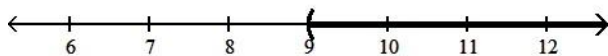
A)  $(-\infty, 9)$



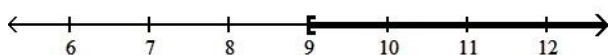
B)  $(-\infty, 9]$



C)  $(9, \infty)$

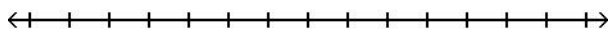


D)  $[9, \infty)$

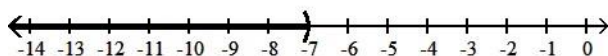


277)  $6x \geq 42$

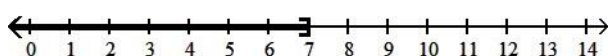
277) \_\_\_\_\_



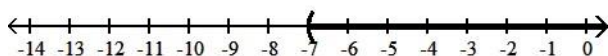
A)  $(-\infty, -7)$



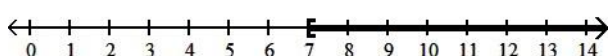
B)  $(-\infty, 7]$



C)  $(-7, \infty)$

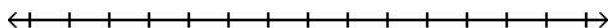


D)  $[7, \infty)$

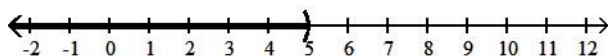


278)  $9x < 45$

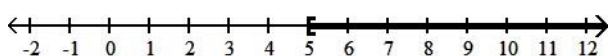
278) \_\_\_\_\_



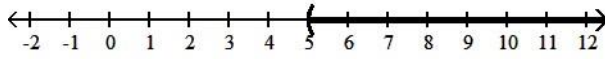
A)  $(-\infty, 5)$



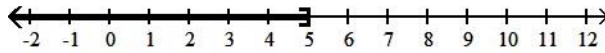
B)  $[5, \infty)$



C)  $(5, \infty)$

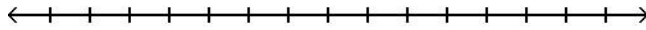


D)  $(-\infty, 5]$

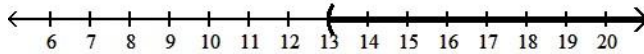


279)  $-4x > 52$

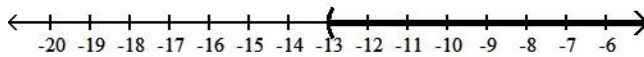
279) \_\_\_\_\_



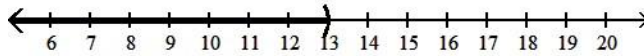
A)  $(13, \infty)$



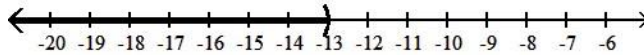
B)  $(-13, \infty)$



C)  $(-\infty, 13)$

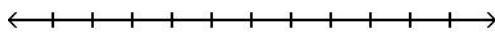


D)  $(-\infty, -13)$

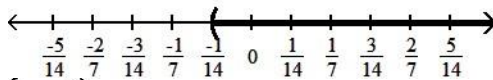


280)  $\frac{1}{7}$   
 $-2x <$

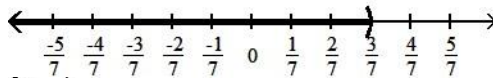
280) \_\_\_\_\_



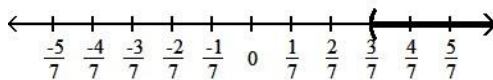
A)  $\left(-\frac{1}{14}, \infty\right)$



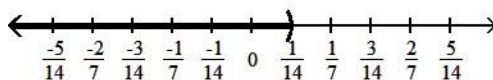
B)  $\left(-\infty, \frac{3}{7}\right)$



C)  $\left(\frac{3}{7}, \infty\right)$



D)  $\left(-\infty, \frac{1}{14}\right)$

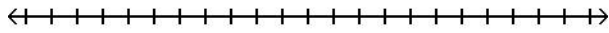




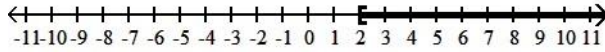
Use both the addition and multiplication properties of inequality to solve the inequality. Graph the solution set on a number line.

281)  $3x + 7 < 13$

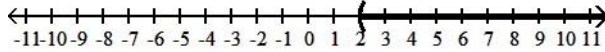
281) \_\_\_\_\_



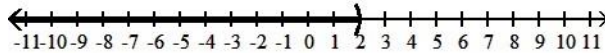
A)  $[2, \infty)$



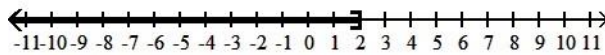
B)  $(2, \infty)$



C)  $(-\infty, 2)$

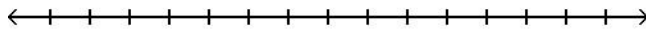


D)  $(-\infty, 2]$

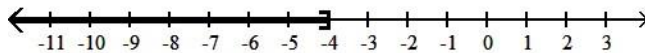


282)  $6x - 30 \geq 6$

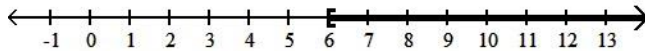
282) \_\_\_\_\_



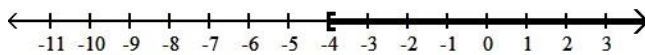
A)  $(-\infty, -4]$



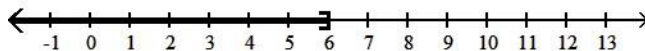
B)  $[6, \infty)$



C)  $[-4, \infty)$

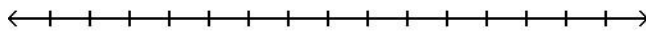


D)  $(-\infty, 6]$

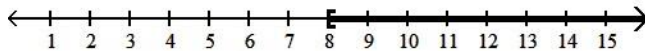


283)  $6 - 3x \geq -18$

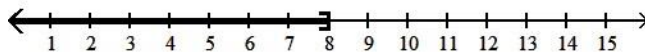
283) \_\_\_\_\_



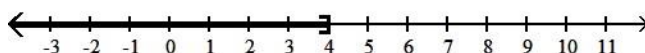
A)  $[8, \infty)$



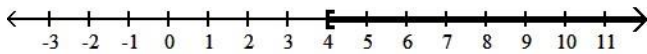
B)  $(-\infty, 8]$



C)  $(-\infty, 4]$

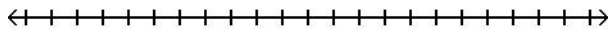


D)  $[4, \infty)$

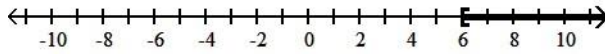


284)  $8 - 3(2 - x) \leq 20$

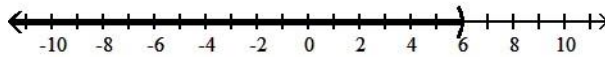
284) \_\_\_\_\_



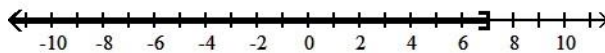
A)  $[6, \infty)$



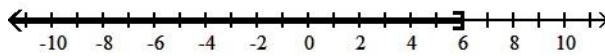
B)  $(-\infty, 6)$



C)  $(-\infty, 7]$

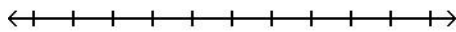


D)  $(-\infty, 6]$

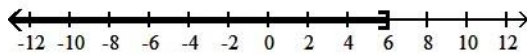


285)  $9x - 5 \leq 3x - 13$

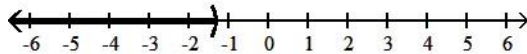
285) \_\_\_\_\_



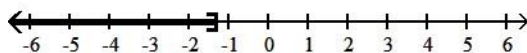
A)  $(-\infty, 6]$



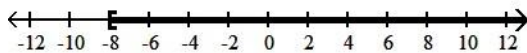
B)  $\left(-\infty, -\frac{4}{3}\right)$



C)  $\left(-\infty, -\frac{4}{3}\right]$

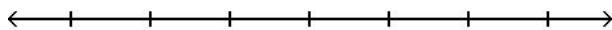


D)  $[-8, \infty)$



286)  $11t - 1 \geq 9t - 3$

286) \_\_\_\_\_



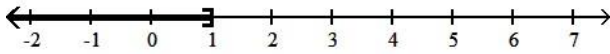
A)  $(-\infty, -1]$



B)  $[1, \infty)$



C)  $(-\infty, 1]$

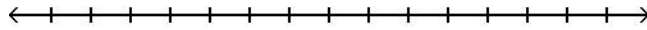


D)  $[-1, \infty)$

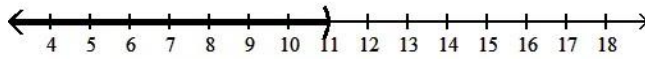


287)  $3x - 7 < 4(x - 1)$

287) \_\_\_\_\_



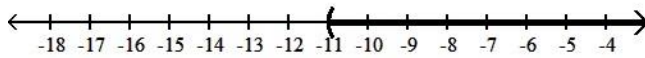
A)  $(-\infty, 11)$



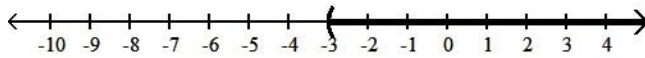
B)  $(-\infty, 3)$



C)  $(-11, \infty)$

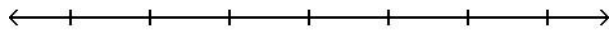


D)  $(-3, \infty)$

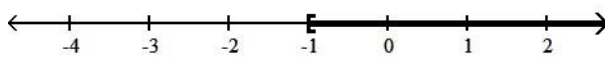


288)  $21x - 24 > 3(6x - 9)$

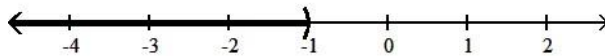
288) \_\_\_\_\_



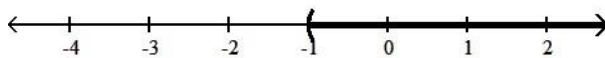
A)  $[-1, \infty)$



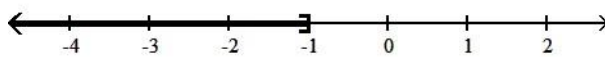
B)  $(-\infty, -1)$



C)  $(-1, \infty)$

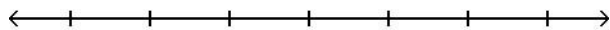


D)  $(-\infty, -1]$

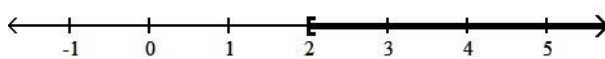


289)  $-2(3x - 3) < -8x + 10$

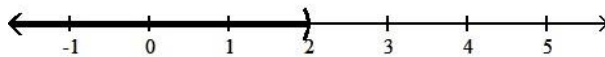
289) \_\_\_\_\_



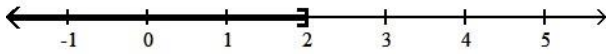
A)  $[2, \infty)$



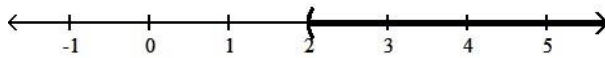
B)  $(-\infty, 2)$



C)  $(-\infty, 2]$

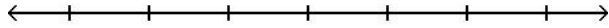


D)  $(2, \infty)$

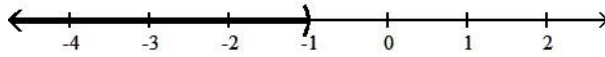


290)  $-7x + 10 + 7x < 6 - 2x + 2$

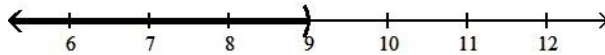
290) \_\_\_\_\_



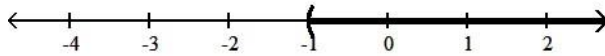
A)  $(-\infty, -1)$



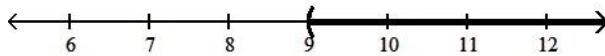
B)  $(-\infty, 9)$



C)  $(-1, \infty)$

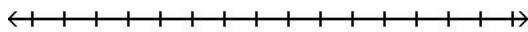


D)  $(9, \infty)$

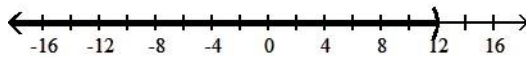


291)  $\frac{x}{2} + 3 \leq 8$

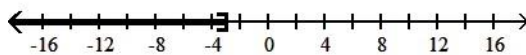
291) \_\_\_\_\_



A)  $(-\infty, 12)$



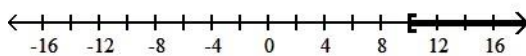
B)  $(-\infty, -3]$



C)  $(-\infty, 10]$

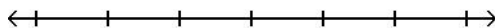


D)  $[10, \infty)$

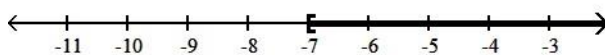


292)  $30n + 10 \leq 5(5n - 5)$

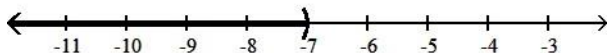
292) \_\_\_\_\_



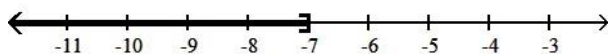
A)  $[-7, \infty)$



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



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

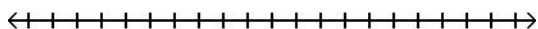


D)  $(-7, \infty)$

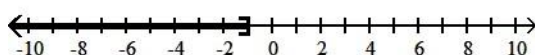


293)  $\frac{2}{3}(2x - 1) < -2$

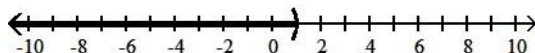
293) \_\_\_\_\_



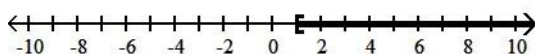
A)  $(-\infty, -1]$



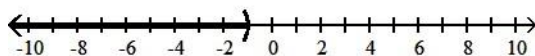
B)  $(-\infty, 1)$



C)  $[1, \infty)$



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



**Solve the inequality.**

294)  $x + 6 \geq x - 4$

294) \_\_\_\_\_

A)  $[-5, \infty)$

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

C)  $(-\infty, -5]$

D)  $\emptyset$

295)  $8x + 11 > 8(x + 9)$

295) \_\_\_\_\_

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

B)  $(11, \infty)$

C)  $\emptyset$

D)  $(-\infty, 11)$

296)  $6x - 14 > 6(x - 12)$

296) \_\_\_\_\_

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

B)  $\emptyset$

C)  $(14, \infty)$

D)  $(-\infty, 14)$

297)  $9x \leq 9(x + 10)$

297) \_\_\_\_\_

A)  $(-\infty, 10]$

B)  $\emptyset$

C)  $(-\infty, 9]$

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

298)  $8x - 7 \geq 7(x - 1)$

298) \_\_\_\_\_

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

B)  $\emptyset$

C)  $[0, \infty)$

D)  $(-\infty, 0]$

299)  $-3(-3 - x) < 5x + 21 - 12 - 2x$

299) \_\_\_\_\_

A)  $(-\infty, 0)$

B)  $\emptyset$

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

D)  $(-\infty, 9)$

**Solve the problem.**

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

300) \_\_\_\_\_

A) 95

B) 93

C) 96

D) 94

- 301) A certain car has a weight limit for all passengers and cargo of 1162 pounds. The four passengers in the car weigh an average of 165 pounds. Use an inequality to find the maximum weight of the cargo that the car can handle. 301) \_\_\_\_\_

A)  $\frac{1162}{165}$   
at most  
lb

B) at most 581 lb

C) at most 997 lb

D) at most 502 lb

- 302) A certain store has a fax machine available for use by its customers. The store charges \$1.90 to send the first page and \$0.55 for each subsequent page. Use an inequality to find the maximum number of pages that can be faxed for \$6.30 302) \_\_\_\_\_

A) at most 46 pages

B) at most 3 pages

C) at most 11 pages

D) at most 8 pages

- 303) An archery set containing a bow and three arrows costs \$49. Additional arrows can be purchased for \$4 each. Gerri has \$105 to spend on the set and additional arrows. Including the arrows in the set, what is the maximum total number of arrows Gerri can purchase? 303) \_\_\_\_\_

A) at most 2 arrow(s)

B) at most 26 arrows

C) at most 14 arrows

D) at most 17 arrows

- 304) When making a long distance call from a certain pay phone, the first three minutes of a call cost \$1.95. After that, each additional minute or portion of a minute of that call costs \$0.30. Use an inequality to find the maximum number of minutes one can call long distance for \$4.05. 304) \_\_\_\_\_

A) at most 7 min

B) at most 2 min

C) at most 10 min

D) at most 14 min

- 305) It takes 18 minutes to set up a candy making machine. Once the machine is set up, it produces 60 candies per minute. Use an inequality to find the number of candies that can be produced in 6 hours if the machine has not yet been set up. 305) \_\_\_\_\_

A) at most 6480 candies

B) at most 5400 candies

C) at most 20,520 candies

D) at most 360 candies

### Solve the equation.

- 306)  $3x - 1 = -25$  306) \_\_\_\_\_

A) {7}

B) {-8}

C) {-23}

D) {-27}

- 307)  $-8x - 1 = 4x - 8$  307) \_\_\_\_\_

A)  $\left\{\frac{4}{9}\right\}$ B)  $\left\{\frac{7}{12}\right\}$ C)  $\left\{-\frac{12}{7}\right\}$ D)  $\left\{\frac{12}{7}\right\}$ 

- 308)  $6x + 7(3x - 4) = 1 - 2x$  308) \_\_\_\_\_

A) {1}

B)  $\left\{-\frac{27}{25}\right\}$ 

C) {- 1}

D)  $\left\{-\frac{27}{29}\right\}$ 

- 309)  $4(2y - 4) = 7(y + 5)$  309) \_\_\_\_\_

A) {-19}

B) {23}

C) {19}

D) {51}

- 310)  $\frac{1}{8}x = -6$  310) \_\_\_\_\_

A) {-1}

B) {2}

C) {1}

D) {-48}

$$311) \frac{x}{5} + \frac{6}{5} = \frac{x}{7} + \frac{8}{7}$$

A) {-2}

B) {2}

C) {1}

D) {-1}

311) \_\_\_\_

$$312) 1.8 - 6.2x = -37.4 - 1.3x$$

A) {-44}

B) {6.3}

C) {8}

D) {6.5}

312) \_\_\_\_

**Solve the problem.**

313) In one state, speeding fines are determined by the formula  $F = 8(x - 65) + 100$ , where F is the cost, in dollars, of the fine if a person is caught driving x miles per hour. If the fine comes to \$300, how fast was the person driving?

A) 88 mph

B) 100 mph

C) 90 mph

D) 92 mph

313) \_\_\_\_

**Solve the formula for the specified variable.**

$$314) V = lwh \text{ for } h$$

$$A) \frac{V}{lw} \\ h =$$

$$B) \frac{lw}{V} \\ h =$$

$$C) \frac{Vl}{w} \\ h =$$

$$D) h = Vl w$$

314) \_\_\_\_

$$315) \frac{P - 2l}{2} \text{ for } l \\ w =$$

$$A) \frac{P - 2w}{2} \\ l =$$

$$B) l = 2P - 4w$$

$$C) \frac{P + 2w}{2} \\ l =$$

$$D) \frac{2}{P - 2w} \\ l =$$

315) \_\_\_\_

**Solve the problem.**

316) What is 4% of 200?

A) 800

B) 8

C) 0.8

D) 80

316) \_\_\_\_

317) 41.6 is 52% of what?

A) 21.632

B) 80

C) 2163.2

D) 0.8

317) \_\_\_\_

318) 5 is what percent of 2 ?

A) 2.5%

B) 1000%

C) 10%

D) 250%

318) \_\_\_\_

319) Four times a number added to 7 times the number is 33. What is the number?

A) 1

B) 3

C) -4.7

D) 4.7

319) \_\_\_\_

320) 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 \$250,000, find each worker's salary.

A) president's salary = \$62,500; department head's salary = \$187,500

B) president's salary = \$125,000; department head's salary = \$62,500

C) president's salary = \$187,500; department head's salary = \$62,500

D) president's salary = \$18,750; department head's salary = \$6250

320) \_\_\_\_

321) A promotional deal for long distance phone service charges a \$15 basic fee plus \$0.05 per minute for all calls. If Joe's phone bill was \$61 under this promotional deal, how many minutes of phone calls did he make? Round to the nearest integer, if necessary.

A) 1520 min

B) 920 min

C) 2 min

D) 9 min

321) \_\_\_\_

322) A rectangular carpet has a perimeter of 208 inches. The length of the carpet is 76 inches more than the width. What are the dimensions of the carpet?

A) length: 104 in.; width: 97 in.

B) length: 73 in.; width: 59 in.

322) \_\_\_\_

C) length: 104 in.; width: 90 in.

D) length: 90 in.; width: 14 in.

323) Sales at a local ice cream shop went up 20% in 5 years. If 20,000 ice cream cones were sold in the current year, find the number of ice cream cones sold 5 years ago. Round to the nearest cone when necessary.

A) 16,000 ice cream cones

B) 16,667 ice cream cones

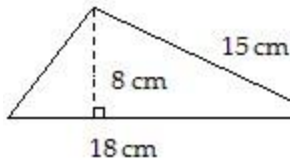
C) 4000 ice cream cones

D) 100,000 ice cream cones

323) \_\_\_\_\_

**Find the area of the figure.**

324)



324) \_\_\_\_\_

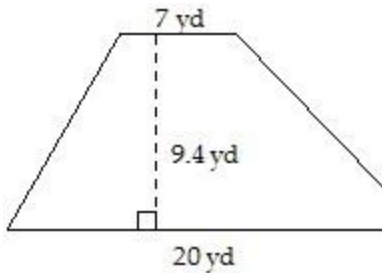
A)  $135 \text{ cm}^2$

B)  $60 \text{ cm}^2$

C)  $72 \text{ cm}^2$

D)  $144 \text{ cm}^2$

325)



325) \_\_\_\_\_

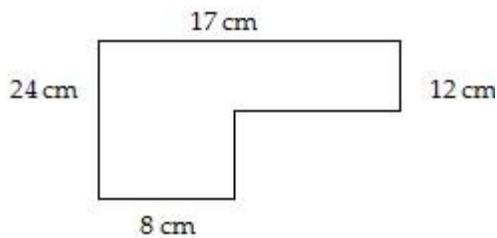
A)  $65.8 \text{ yd}^2$

B)  $126.9 \text{ yd}^2$

C)  $188 \text{ yd}^2$

D)  $253.8 \text{ yd}^2$

326)



326) \_\_\_\_\_

A)  $312 \text{ cm}^2$

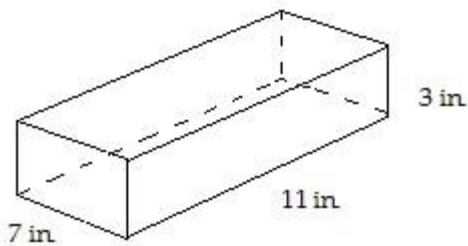
B)  $372 \text{ cm}^2$

C)  $300 \text{ cm}^2$

D)  $264 \text{ cm}^2$

**Find the volume of the figure. Where applicable, express answers in terms of  $\pi$ .**

327)



327) \_\_\_\_\_

A)  $99 \text{ in.}^3$

B)  $847 \text{ in.}^3$

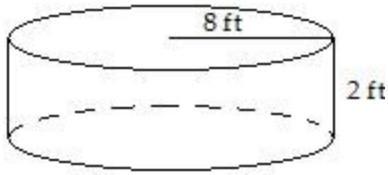
C)  $147 \text{ in.}^3$

D)  $231 \text{ in.}^3$



328)

328) \_\_\_\_\_



A)  $64\pi \text{ ft}^3$

B)  $128 \text{ ft}^3$

C)  $16\pi \text{ ft}^3$

D)  $128\pi \text{ ft}^3$

**Solve the problem.**

329) What will it cost to cover a rectangular floor measuring 40 feet by 80 feet with square tiles that measure

329) \_\_\_\_\_

2 feet on each side if a box of 10 tiles costs \$14 per box?

A) \$1120

B) \$560

C) \$40

D) \$2240

330) A sailboat has a triangular sail with an area of 130 square feet and a base that measures 10 feet. Find the height of the sail.

330) \_\_\_\_\_

A) 65 ft

B) 13 ft

C) 26 ft

D) 52 ft

331) In a triangle, one angle is 3 times as large as another. The measure of the third angle is  $80^\circ$  greater than that of the smallest angle. Find the measure of each angle.

331) \_\_\_\_\_

A)  $30^\circ, 90^\circ, 60^\circ$

B)  $20^\circ, 60^\circ, 100^\circ$

C)  $20^\circ, 60^\circ, 80^\circ$

D)  $25^\circ, 75^\circ, 80^\circ$

332) How many degrees are there in an angle that measures  $24^\circ$  more than the measure of its complement?

332) \_\_\_\_\_

A)  $78^\circ$

B)  $57^\circ$

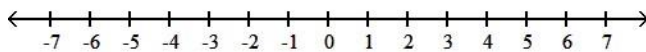
C)  $102^\circ$

D)  $33^\circ$

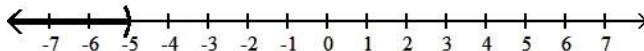
**Express the solution set of the inequality in interval notation and graph the interval.**

333)  $x > -5$

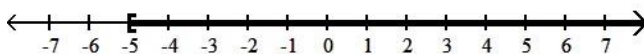
333) \_\_\_\_\_



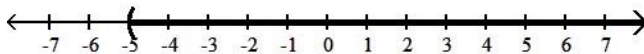
A)  $(-\infty, -5)$



B)  $[-5, \infty)$



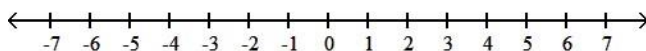
C)  $(-5, \infty)$



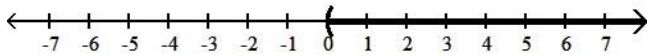
D)  $(-\infty, -5]$

334)  $x \leq 0$

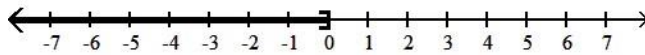
334) \_\_\_\_\_



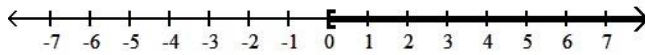
A)  $(0, \infty)$



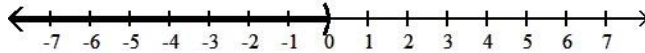
B)  $(-\infty, 0]$



C)  $[0, \infty)$



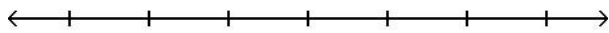
D)  $(-\infty, 0)$



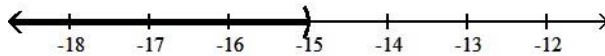
Solve the inequality and graph the solution set on a number line.

335)  $\frac{x}{5} \leq -3$

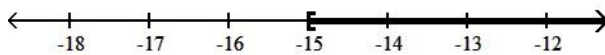
335) \_\_\_\_\_



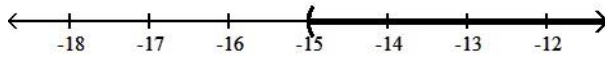
A)  $(-\infty, -15)$



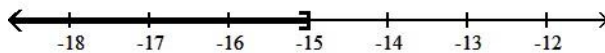
B)  $[-15, \infty)$



C)  $(-15, \infty)$

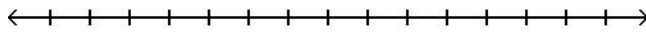


D)  $(-\infty, -15]$

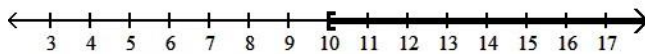


336)  $30 - 6x \geq -30$

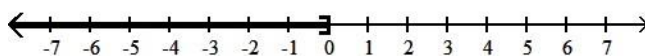
336) \_\_\_\_\_



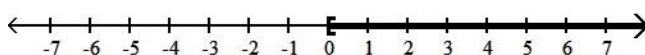
A)  $[10, \infty)$



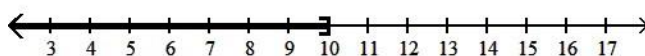
B)  $(-\infty, 0]$



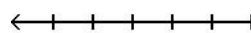
C)  $[0, \infty)$



D)  $(-\infty, 10]$

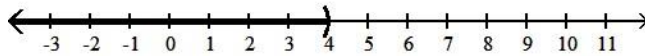


337)  $5x + 2 < 6(x - 1)$

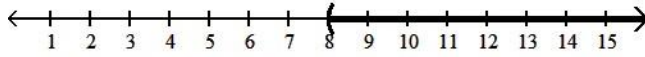


337)

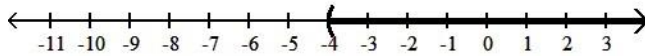
A)  $(-\infty, 4)$



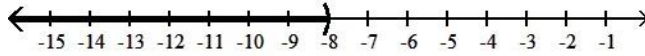
B)  $(8, \infty)$



C)  $(-4, \infty)$



D)  $(-\infty, -8)$



**Solve the problem.**

338) Claire received scores of 85, 88, 87, and 90 on her algebra tests. What score must she receive on the fifth test to have an overall test score average of at least 87?

338) \_\_\_\_\_

A) at most 85

B) at most 86

C) at least 85

D) at least 86

339) The length of a rectangle is 20 feet. For what widths is the perimeter less than 68 feet?

339) \_\_\_\_\_

A) widths less than 14 ft

B) widths less than 48 ft

C) widths less than 24 ft

D) widths less than 28 ft

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

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

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

156) A  
157) C  
158) B  
159) B  
160) A  
161) A  
162) C  
163) B  
164) B  
165) A  
166) B  
167) D  
168) D  
169) A  
170) B  
171) A  
172) A  
173) B  
174) A  
175) D  
176) B  
177) D  
178) C  
179) C  
180) C  
181) B  
182) C  
183) C  
184) A  
185) C  
186) D  
187) B  
188) B  
189) D  
190) A  
191) D  
192) A  
193) C  
194) C  
195) B  
196) A  
197) D  
198) C  
199) D  
200) A  
201) D  
202) D  
203) B  
204) B  
205) C  
206) A  
207) C

208) A  
209) A  
210) A  
211) A  
212) D  
213) A  
214) A  
215) B  
216) C  
217) D  
218) D  
219) A  
220) B  
221) C  
222) A  
223) C  
224) A  
225) B  
226) A  
227) D  
228) C  
229) C  
230) A  
231) A  
232) A  
233) B  
234) A  
235) A  
236) C  
237) C  
238) B  
239) A  
240) A  
241) A  
242) C  
243) B  
244) D  
245) B  
246) A  
247) C  
248) A  
249) D  
250) A  
251) A  
252) A  
253) C  
254) D  
255) C  
256) D  
257) D  
258) B  
259) A



260) D  
261) D  
262) D  
263) C  
264) C  
265) D  
266) B  
267) A  
268) A  
269) D  
270) D  
271) C  
272) C  
273) C  
274) C  
275) B  
276) C  
277) D  
278) A  
279) D  
280) A  
281) C  
282) B  
283) B  
284) D  
285) C  
286) D  
287) D  
288) C  
289) B  
290) A  
291) C  
292) C  
293) D  
294) B  
295) C  
296) A  
297) D  
298) C  
299) B  
300) A  
301) D  
302) D  
303) D  
304) C  
305) C  
306) B  
307) B  
308) A  
309) D  
310) D  
311) D

312) C  
313) C  
314) A  
315) A  
316) B  
317) B  
318) D  
319) B  
320) C  
321) B  
322) D  
323) B  
324) C  
325) B  
326) C  
327) D  
328) D  
329) A  
330) C  
331) B  
332) B  
333) C  
334) B  
335) D  
336) D  
337) B  
338) C  
339) A