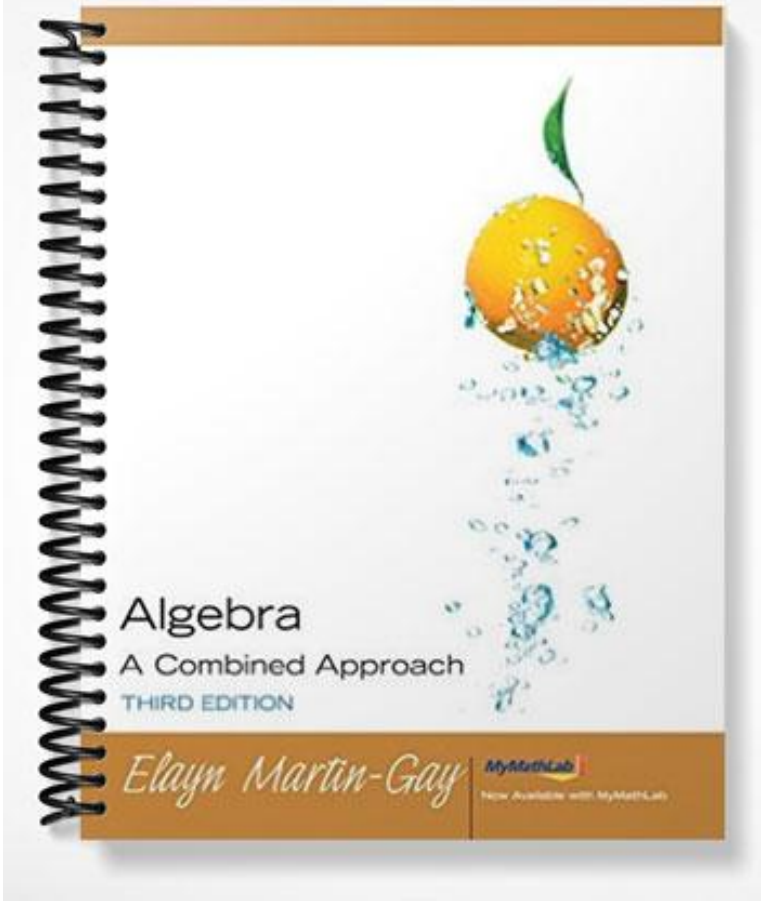
TEST BANK


Algebra
A Combined Approach
THIRD EDITION
Elayn Martin-Gay
MyMathLab
Now Available with MyMathLab

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

1) $b + 17 = 11$ 1) _____
A) 28 B) -28 C) 6 D) -6

2) $1 = b + 6$ 2) _____
A) -7 B) 5 C) 7 D) -5

3) $t - 7 = 12$ 3) _____
A) -5 B) 19 C) -19 D) 5

4) $\frac{1}{2} + x = 9$ 4) _____
A) $\frac{17}{2}$ B) 4 C) $\frac{19}{2}$ D) 17

5) $x + \frac{1}{4} = \frac{3}{4}$ 5) _____
A) $\frac{1}{4}$ B) $\frac{1}{2}$ C) $\frac{2}{3}$ D) 1

6) $x - \frac{1}{6} = \frac{5}{6}$ 6) _____
A) 1 B) $\frac{1}{2}$ C) $\frac{4}{5}$ D) $\frac{2}{3}$

7) $x + \frac{3}{4} = -\frac{1}{12}$ 7) _____
A) $-\frac{41}{48}$ B) $-\frac{5}{6}$ C) $-\frac{1}{4}$ D) $-\frac{1}{3}$

8) $x + 6.7 = 14.1$ 8) _____
A) 7.4 B) 20.3 C) 20.8 D) 6.9

9) $y - 14.3 = 5.7$ 9) _____
A) 19.5 B) 8.6 C) 8.1 D) 20

10) $x - 1.1 = 11$ 10) _____
A) 12.1 B) 11.6 C) 9.9 D) 9.4

Solve the equation. Don't forget to first simplify each side of the equation, if possible.

11) $9x - 8x + 6 = 6$ 11) _____
A) 0 B) 12 C) 6 D) -6

12) $10y = 2y + 10 + 7y$ 12) _____
A) -10 B) -100 C) 100 D) 10

13) $-4a + 2 + 5a = 15 - 26$ 13) _____
A) 43 B) 13 C) -13 D) -43

14) $-7b + 4 + 5b = -3b + 9$ 14) _____

A) -9 B) -4 C) 5 D) 9

15) $-7x - 11 + 8x = 9$ 15) _____

A) -2 B) 2 C) -20 D) 20

16) $-21 + 13 = 8x + 4 - 7x$ 16) _____

A) 38 B) 12 C) -38 D) -12

17) $9x + 2 + 5x - 6 = 10$ 17) _____

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

18) $4(y - 2) = 5y - 8$ 18) _____

A) 0 B) 8 C) -16 D) -8

19) $7x + 3 = 8(x - 3)$ 19) _____

A) -21 B) 27 C) 21 D) -27

20) $3(5x + 2) + 5 = 13x + 3$ 20) _____

A) -16 B) 4 C) -8 D) -4

21) $4x = 6(4x + 5)$ 21) _____

A) $\frac{15}{2}$ B) $\frac{2}{3}$ C) $-\frac{3}{2}$ D) $\frac{3}{2}$

22) $3(6x - 5) = 8x - 6$ 22) _____

A) $\frac{9}{10}$ B) $-\frac{9}{10}$ C) $\frac{9}{26}$ D) $\frac{21}{10}$

23) $90(x - 11) = -99(x + 10)$ 23) _____

A) -9 B) 0

C) all real numbers D) ∅

24) $3(x + 2) = 4(x - 8)$ 24) _____

A) 38 B) -26

C) all real numbers D) ∅

25) $(x - 5) - (x + 9) = 7x$ 25) _____

A) $-\frac{14}{5}$ B) $-\frac{14}{3}$ C) $\frac{2}{7}$ D) - 2

26) $7(k + 4) - (6k - 7) = 7$ 26) _____

A) 42 B) 4 C) - 28 D) 28

27) $\frac{2}{3}x + \frac{1}{10} = -\frac{1}{3}x - \frac{1}{9}$ 27) _____

A) $-\frac{2}{19}$ B) $-\frac{19}{90}$ C) $\frac{19}{90}$ D) $-\frac{1}{90}$

28) $-8.4 + 5x - 6.6 + 4x - 2.1 = 5.1 + 10x + 1.5$ 28) _____

A) -23.7 B) 10.5 C) 23.7 D) -10.5

Write the algebraic expression described.

29) Two numbers have a sum of 59. If one number is q, express the other number in terms of q. 29) _____

A) 59 - q B) 59 - 2q C) q - 59 D) q + 59

30) A 59-centimeter piece of rope is cut into two pieces. If one piece is z centimeters long, express the other length as an algebraic expression in z. 30) _____

A) (59 - z) cm B) (z - 59) cm C) (59 - 2z) cm D) (z + 59) cm

31) In the race for Student Body President, Jose received 328 more votes than Angela. If Angela received x votes, how many votes did Jose receive? 31) _____

A) (x + 328) votes B) (328x) votes C) (328 - x) votes D) (x - 328) votes

32) During a walk-a-thon, Rosilyn walked 7 fewer laps than June walked. If June walked b laps, how many laps did Rosilyn walk? 32) _____

A) (b - 7) laps B) $\left(\frac{b}{7}\right)$ laps C) (7 - b) laps D) (b + 7) laps

33) The sum of the angles of a triangle is 180°. If one angle of a triangle measures x° and a second angle measures $(7x + 21)°$, express the measure of the third angle in terms of x. 33) _____

A) (159 - 8x)° B) (159 - 7x)° C) (201 - 8x)° D) (159 + 8x)°

34) A quadrilateral is a four-sided figure whose angle sum is 360°. If one angle measures x°, a second angle measures 4x°, and a third angle measures 9x°, express the measure of the fourth angle in terms of x. 34) _____

A) (360 - 14x)° B) (360 - 13x)° C) (14x - 360)° D) (360 + 14x)°

Solve the equation.

35) $\frac{1}{5}x = 3$ 35) _____

A) 15 B) 7 C) 8 D) 0

36) $-\frac{1}{24}a = 0$ 36) _____

A) -24 B) 0 C) 1 D) 24

37) $\frac{n}{2} = 3$ 37) _____

A) 6 B) 1 C) 5 D) 4

38) $2a = -14$ 38) _____

A) -16 B) -7 C) 16 D) 1

39) $-14.7 = -2.1c$ 39) _____

A) -12.6 B) 7 C) 2 D) 12.6

40) $-5x = -20$ 40) _____

A) 2 B) 4 C) 15 D) -15

41) $\frac{5}{6}d = \frac{5}{8}$ 41) _____

A) $-\frac{3}{4}$ B) $\frac{4}{3}$ C) $\frac{3}{4}$ D) $\frac{15}{4}$

42) $\frac{n}{3} = 10$ 42) _____

A) 3 B) 30 C) 13 D) 12

43) $\frac{4}{5}k = \frac{16}{5}$ 43) _____

A) 4 B) 8 C) 9 D) 1

44) $-z = 5$ 44) _____

A) 5 B) -1 C) -5 D) 0

45) $\frac{x}{8} + 8 = 13$ 45) _____

A) 168 B) 13 C) 170 D) 40

46) $2x - 7x + 8 = 9x$ 46) _____

A) $-\frac{7}{4}$ B) $-\frac{4}{7}$ C) 2 D) $\frac{4}{7}$

47) $9r + 10 = 100$ 47) _____

A) 81 B) 10 C) 1 D) 85

48) $4n - 6 = 2$ 48) _____

A) 2 B) 4 C) 6 D) 8

49) $-15 = 6x + 3$ 49) _____

A) 5 B) -3 C) -24 D) -20

50) $\frac{1}{5}a - \frac{1}{5} = -4$ 50) _____

A) -21 B) -19 C) 21 D) 19

51) $\frac{1}{3}f - 3 = 1$ 51) _____

A) 12 B) 6 C) -12 D) -6

52) $9x - 12x = 31 - 19$ 52) _____

A) -4 B) 3 C) -3 D) 4

53) $3x - x = 9 - 3$ 53) _____

A) -3 B) 3 C) -2 D) 2

54) $7x - 5 - 4x + 5 = 3$ 54) _____

A) 1 B) -

$\frac{7}{3}$ C) - 1 D) $\frac{3}{11}$

55) 0.4x - 0.5x - 6 = -2 55) _____
A) 40 B) 28 C) -40 D) -28

Write the algebraic expression described.

56) If x represents the first of three consecutive even integers, express the sum of the three integers in terms of x. 56) _____
A) 3x + 12 B) 3x + 6 C) x + 6 D) 3x + 3

57) If x represents the first of four consecutive odd integers, express the sum of the first integer and the fourth integer in terms of x. 57) _____
A) 2x + 3 B) 2x + 8 C) 4x + 12 D) 2x + 6

58) If x is the first of three consecutive integers, express the sum of 32 and the third integer as an algebraic expression in terms of x. 58) _____
A) x + 34 B) 2x + 34 C) x + 32 D) x + 33

Solve the equation.

59) 7x - (6x - 1) = 2 59) _____
A) $\frac{1}{13}$ B) - 1 C) 1 D) $-\frac{1}{13}$

60) 4(3x - 1) = 16 60) _____
A) $\frac{5}{3}$ B) $\frac{5}{4}$ C) 1 D) $\frac{17}{12}$

61) (y - 3) - (y + 8) = 9y 61) _____
A) $-\frac{1}{9}$ B) - 11 C) $-\frac{11}{9}$ D) $-\frac{11}{3}$

62) 3p = 6(7p + 9) 62) _____
A) $-\frac{18}{13}$ B) $\frac{13}{18}$ C) $\frac{18}{13}$ D) 18

63) 14(8c - 2) = 6c - 2 63) _____
A) $\frac{13}{59}$ B) $\frac{15}{53}$ C) $-\frac{13}{53}$ D) $\frac{13}{53}$

64) 5(y + 3) = 6(y - 3) 64) _____
A) 33 B) -3 C) 3 D) -33

65) 3(2z - 5) = 5(z + 4) 65) _____
A) -5 B) 8 C) 35 D) 5

66) 5p = 7(6p + 7) 66) _____
A) $\frac{37}{49}$ B) $-\frac{49}{37}$ C) $\frac{49}{5}$ D) $\frac{49}{37}$

67) $2(2z - 4) = 3(z + 5)$ 67) _____

A) 9 B) -7 C) 23 D) 7

68) $6x + 4(2x - 4) = 2 - 4x$ 68) _____

A) $-\frac{7}{5}$ B) $-\frac{7}{9}$ C) -1 D) 1

69) $\frac{f}{6} - 4 = 1$ 69) _____

A) 18 B) -18 C) 30 D) -30

70) $\frac{2x}{5} - \frac{x}{3} = 5$ 70) _____

A) 75 B) -150 C) 150 D) -75

71) $\frac{9}{10}x + \frac{9}{5} = \frac{4}{5}x$ 71) _____

A) 26 B) -26 C) 18 D) -18

72) $\frac{a}{3} - \frac{1}{3} = -4$ 72) _____

A) 13 B) 11 C) -11 D) -13

73) $\frac{b}{12} - 8 = -4$ 73) _____

A) 50 B) -48 C) 48 D) -50

74) $\frac{4(7 - x)}{3} = x$ 74) _____

A) $\frac{28}{5}$ B) -4 C) 4 D) 7

75) $\frac{3(y - 2)}{5} = 1 - 3y$ 75) _____

A) $\frac{7}{6}$ B) $-\frac{11}{18}$ C) $\frac{11}{18}$ D) $\frac{11}{6}$

Write the algebraic expression described. Simplify if possible.

76) Two numbers have a sum of 24. If one number is q, express the other number in terms of q. 76) _____

A) 24 - 2q B) 24 - q C) q - 24 D) q + 24

77) A 32-centimeter piece of rope is cut into two pieces. If one piece is z centimeters long, express the other length as an algebraic expression in z. 77) _____

A) (z - 32) cm B) (32 - z) cm C) (32 - 2z) cm D) (z + 32) cm

78) In the race for Student Body President, Jose received 439 more votes than Angela. If Angela received x votes, how many votes did Jose receive? 78) _____

A) (x - 439) votes B) (x + 439) votes C) (439 - x) votes D) (439x) votes

Solve the equation.

79) $5.7m + 2.2 - 3.4m = 2.4 + 2.3m - 0.2$ 79) _____

A) 0 B) 0.2

C) all real numbers D) no solution

80) $8x - 4 + 8x + 6 = 5x + 11x - 1$ 80) _____

A) 0 B) 256

C) all real numbers D) no solution

81) $5(x + 2) = (5x + 10)$ 81) _____

A) 20 B) 0

C) all real numbers D) no solution

82) $2(x + 6) - (2x + 12) = 0$ 82) _____

A) 6 B) 0

C) all real numbers D) no solution

83) $\frac{1}{2}(4x - 6) = 6(\frac{1}{3}x - \frac{1}{2}) + 7$ 83) _____

A) $\frac{7}{4}$ B) 0

C) all real numbers D) no solution

84) $\frac{x}{9} - 7 = \frac{x}{9}$ 84) _____

A) $\frac{63}{2}$ B) 0

C) all real numbers D) no solution

85) $-3(x - 4) - 12 = 5x - 8(x - 5)$ 85) _____

A) -52 B) 28

C) all real numbers D) no solution

86) $0.02(4x - 4) = 0.08(x + 7) - 0.64$ 86) _____

A) -0.64 B) -0.08

C) all real numbers D) no solution

Solve.

87) Four times a number, added to -4, is -40. Find the number. 87) _____

A) -144 B) 9 C) -36 D) -9

88) Three times a number, added to 6, is -3. Find the number. 88) _____

A) 3 B) -9 C) -3 D) -27

89) Four times the sum of some number and 3 is equal to 7 times the number minus 15. 89) _____

A) -9 B) 9 C) 27 D) -27

90) The difference of a number and 7 is the same as 37 less the number. Find the number. 90) _____

A) 22 B) -15 C) 15 D) -22

91) Six times some number added to 7 amounts to -17 added to the product of 3 and the number. 91) _____

A) 24 B) -24 C) 8 D) -8

92) Nine times the sum of a number and -270 yields -27. Find the number. 92) _____

A) -33 B) -273 C) 27 D) 267

93) A number subtracted from 13 yields the quotient of 63 and 9. Find the number. 93) _____

A) -554 B) 20 C) 5 D) 6

94) 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 $290,000, find each worker's salary. 94) _____

A) president's salary = $72,500; department head's salary = $217,500

B) president's salary = $217,500; department head's salary = $72,500

C) president's salary = $21,750; department head's salary = $7250

D) president's salary = $145,000; department head's salary = $72,500

95) 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 $69 under this promotional deal, how many minutes of phone calls did he make? Round to the nearest integer, if necessary. 95) _____

A) 11 minutes B) 1680 minutes C) 1080 minutes D) 3 minutes

96) Two angles are complementary if their sum is 90°. If the measure of the first angle is x°, and the measure of the second angle is (3x - 2)°, find the measure of each angle. 96) _____

A) 1st angle = 31°; 2nd angle = 59° B) 1st angle = 23°; 2nd angle = 67°

C) 1st angle = 22°; 2nd angle = 64° D) 1st angle = 22°; 2nd angle = 68°

97) 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. 97) _____

A) 40 miles B) 153 miles C) 38 miles D) 347 miles

98) A 6-ft. board is cut into 2 pieces so that one piece is 2 feet longer than 3 times the shorter piece. If the shorter piece is x feet long, find the lengths of both pieces. 98) _____

A) shorter piece: 3 ft; longer piece: 18 ft B) shorter piece: 1 ft; longer piece: 5 ft

C) shorter piece: 16 ft; longer piece: 18 ft D) shorter piece: 6 ft; longer piece: 20 ft

99) In a recent International Gymnastics competition, the U.S., China, and Romania were the big winners. If the total number of medals won by each team are three consecutive integers whose sum is 90 and the U.S. won more than China who won more than Romania, how many medals did each team win? 99) _____

A) U.S.: 32 medals; China: 31 medals; Romania: 30 medals

B) U.S.: 92 medals; China: 91 medals; Romania: 90 medals

C) U.S.: 31 medals; China: 30 medals; Romania: 29 medals

D) U.S.: 29 medals; China: 28 medals; Romania: 27 medals

100) Mary and her brother John collect foreign coins. Mary has th re e ti mes the number of coins that John has. Together they have 160 foreign coins. Find how many coins Mary has. 100) _____

A) 112 coins B) 120 coins C) 24 coins D) 40 coins

101) Center City East Parking Garage has a capacity of 252 cars more than Center City West Parking Garage. If the combined capacity for the two garages is 1222 cars, find the capacity for each gara ge. 101)

_____

A) Center City East: 485 cars
Center City West: 737 cars

B) Center City East: 475 cars
Center City West: 747 cars

C) Center City East: 737 cars
Center City West: 485 cars

D) Center City East: 747 cars
Center City West: 475 cars

102) During an intramural basketball game, Team A scored 1 7 fewer points than Team B. Together, both teams scored a total of 1 5 1 points. How many points did Team A score during the game? 102) _____

A) 8 4 points B) 6 7 points C) 7 5 points D) 6 8 points

103) You have taken up gardening for relaxation and have decided to fence in your new rectangular shaped masterpiece. The length of the garden is 2 meters and 54 meters of fencing is required to completely enclose it. What is the width of the garden? 103) _____

A) 25 m B) 50 m C) 108 m D) 27 m

104) Ted drove to his grandparents' house for a holiday weekend. The total distance (one-way) was 211 miles and it took him 13 hours. How fast was Ted driving? (Round answer to the nearest whole number) 104) _____

A) 274 mph B) 62 mph C) 27 mph D) 16 mph

105) Sally is making a cover for a round table. When finished, the cover will fit exactly with no excess hanging off. Sally has to cut the fabric circle with a 4 inch larger diameter than the table to allow for hemming. If the table has a diameter of 60 inches, how much fabric does Sally need? (Use 3.14 for π. Round to 2 decimal places.) 105) _____

A) 3629.84 $in.^2$ B) 3215.36 $in.^2$ C) $12,861.44$ $in.^2$ D) $12,070.16$ $in.^2$

106) 106) _____

Use the formula $F = \frac{9}{5}C + 32$ to write -35° C as degrees Fahrenheit.

A) -95° F B) -1.8° F C) -37.4° F D) -31° F

107) 107) _____

Use the formula $C = \frac{5}{9}(F - 32)$ to write 257° F as degrees Celsius.

A) 125° C B) 110.8° C C) 160.6° C D) 494.6° C

108) It took Sara's mother 8 hours round trip to drive to the University and bring Sara back home for spring break. If the University is 184 miles from home, find her mother's average speed. 108) _____

A) 23 mph B) $55\frac{1}{2}$ mph C) 46 mph D) 47 mph

109) 109) _____

You are varnishing the background for a rectangular mural. The base of the mural is $5\frac{1}{2}$ meters and the height of the mural is 5 meters. How many cans of varnish will you need if each can covers 10 square meters?

A) 11 cans of varnish B) 3 cans of varnish
C) 6 cans of varnish D) 28 cans of varnish

Substitute the given values into the formula and solve for the unknown variable.

110) $d = rt$; $t = 6$, $d = 30$ 110) _____

A) 5 B) 24 C) 0.2 D) 36

111) $P = 2L + 2W$; $P = 28$, $W = 8$ 111) _____

A) 10 B) 20 C) 14 D) 6

112) $V = \frac{1}{3}Bh$; $V = 12$, $h = 3$ 112) _____

A) 12 B) 4 C) 36 D) 15

113) $I = prt$; $I = 34.5$, $p = 230$, $r = 0.05$ 113) _____

A) 0.3 B) 396.75 C) 3 D) 3.9675

114) $A = \frac{1}{2}(b + B)h$; $A = 92.5$, $b = 17$, $B = 20$ 114) _____

A) 5 B) $18\frac{1}{2}$ C) 340 D) 74

Solve the equation for the indicated variable.

115) $d = rt$ for t 115) _____

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

116) $I = Prt$ for r 116) _____

A) $r = \frac{I}{Pt}$ B) $r = \frac{P - 1}{It}$ C) $r = \frac{P - I}{1 + t}$ D) $r = P - I\,t$

117) $A = \frac{1}{2}bh$ for b 117) _____

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

118) $V = \frac{1}{3}Ah$ for A 118) _____

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

119) $P = a + b + c$ for a 119) _____

A) $a = b + c - P$ B) $a = P + b - c$ C) $a = P + b + c$ D) $a = P - b - c$

120) $P = 2L + 2W$ for W 120) _____

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

121) $A = P + PRT$ for T 121) _____

A) $T = \frac{PR}{A - P}$ B) $T = \frac{P - A}{PR}$ C) $T = \frac{A - P}{PR}$ D) $T = \frac{A}{R}$

122) $F = \frac{9}{5}C + 32$ for C 122) _____

A) $C =$

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

123) $S = 2\pi rh + 2\pi r^2$ for h 123) _____

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

124) $A = \frac{1}{2}h(B + b)$ for B 124) _____

A) $B = 2A - bh$ B) $B = \frac{2A - bh}{h}$ C) $B = \frac{A - bh}{h}$ D) $B = \frac{2A + bh}{h}$

Solve. Round to the nearest hundredth, if necessary.

125) 5% of 700 is what number? 125) _____

A) 3.5 B) 0.35 C) 350 D) 35

126) What number is 86% of 438? 126) _____

A) 376.68 B) 3766.8 C) 37,668 D) 37.67

127) 913 is what percent of 767? 127) _____

A) 0.12% B) 119.04% C) 1.19% D) 84.01%

128) 3.9 is what percent of 22.6? 128) _____

A) 579.49% B) 17.26% C) 0.17% D) 5.79%

129) What percent of 173 is 18.9? 129) _____

A) 915.34% B) 0.11% C) 0.09% D) 10.92%

130) 75 is 70% of what number? 130) _____

A) 10.71 B) 52.5 C) 107.14 D) 1071.4

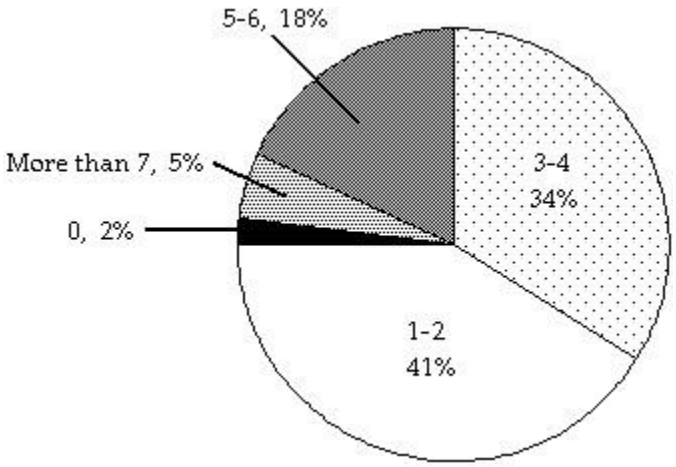
131) 20 is 2% of what number? 131) _____

A) 10,000 B) 1000 C) 40 D) 100

132) 20% of what number is 55? 132) _____

A) 2750 B) 27.5 C) 11 D) 275

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



133) What percent of college students consume 3-4 pizzas in a typical month? 133) _____
A) 41% B) 5% C) 18% D) 34%

134) If State University has approximately 27,000 students, about how many would you expect to consume 5-6 pizzas in a typical month? 134) _____
A) 9180 students B) 4860 students C) 486 students D) 918 students

Solve. Round answers to the nearest cent.

135) A store is advertising a 20% off sale on all new DVD releases. Find the discount of a newly released DVD collectors set that regularly sells for $ 85.00. 135) _____
A) $ 68.00 B) $ 83.30 C) $ 1.70 D) $ 17.00

136) An automobile dealership recently reduced the price of a used sports car by 16%. If the price of the car was $ 48,000.00, find the discount. 136) _____
A) $ 768.00 B) $ 7680.00 C) $ 47,232.00 D) $ 40,320.00

137) A store is advertising 20% off sale on everything in the store. Find the discount of a painting that regularly sells for $\$170$. 137) _____
A) $ 136.00 B) $ 34.00 C) $ 3.40 D) $ 166.60

138) A store is advertising 25% off sale on everything in the store. Find the discount of a computer that regularly sells for $\$1800$. 138) _____
A) $ 1350.00 B) $ 45.00 C) $ 450.00 D) $ 1755.00

139) A store is advertising a 17% off sale on all new DVD releases. Find the sale price of a newly released DVD collectors set that regularly sells for $ 69.00. 139) _____
A) $ 1.17 B) $ 67.83 C) $ 57.27 D) $ 11.73

140) An automobile dealership recently reduced the price of a used sports car by 39%. If the price of the car was $ 32,200.00, find the sale price. 140) _____
A) $ 1255.80 B) $ 30,944.20 C) $ 12,558.00 D) $ 19,642.00

141) A store is advertising 25% off sale on everything in the store. Find the sale price of a camera that regularly sells for $\$150$. 141) _____
A) $ 3.75 B) $ 112.50 C) $ 1462.50 D) $ 37.50

142) A store is advertising 30% off sale on everything in the store. Find the sale price of a necklace that regula

rly sells for $2400. 142) ____

A) $ 72.00 B) $ 1680.00 C) $ 2328.00 D) $ 720.00

143) Jeans are on sale at the local department store for 20% off. If the jeans originally cost $64, find the sale price. (Round to the nearest cent.) 143) _____

A) $62.72 B) $12.80 C) $76.80 D) $51.20

Solve. Round to the nearest tenth, if necessary.

144) Due to a lack of funding, the number of students enrolled at City College went from 9000 last year to 5000 this year. Find the percent decrease in enrollment. (Round to the nearest tenth of a percent, if necessary.) 144) _____

A) 80% B) 55.6% C) 44.4% D) 180%

145) A company increased the number of its employees from 140 to 240. What was the percent increase in employees? 145) _____

A) 71.4% B) 63.2% C) 41.7% D) 58.3%

146) The number of video stores in a region recently decreased from 116 to 92. Find the percent decrease. 146) _____

A) 79.3% B) 20.7% C) 26.1% D) 383.3%

147) In the past ten years, the population of a city decreased from 235,000 to 225,000. Find the percent decrease. 147) _____

A) 4.4% B) 95.7% C) 4.3% D) 2250%

Solve.

148) Sales at a local ice cream shop went up 30% in 5 years. If 43,000 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.) 148) _____

A) 12,900 ice cream cones B) 30,100 ice cream cones

C) 33,077 ice cream cones D) 143,333 ice cream cones

149) Attendance this year at the homecoming football game is 142% of what it was last year. If last year's homecoming football game attendance was 46,000, what is this year's attendance? (Round to the nearest integer, if necessary.) 149) _____

A) 324 people B) 65,320 people C) 653,200 people D) 3087 people

150) How much pure acid should be mixed with 8 gallons of a 50% acid solution in order to get an 80% acid solution? 150) _____

A) 12 gal B) 4 gal C) 20 gal D) 32 gal

151) A chemist needs 5 liters of a 50% salt solution. All she has available is a 20% salt solution and a 70% salt solution. How much of each of the two solutions should she mix to obtain her desired solution? 151) _____

A) 1 liters of the 20% solution; 4 liters of the 70% solution

B) 1.5 liters of the 20% solution; 3.5 liters of the 70% solution

C) 2.5 liters of the 20% solution; 2.5 liters of the 70% solution

D) 2 liters of the 20% solution; 3 liters of the 70% solution

152) The owners of a candy store want to sell, for $6 per pound, a mixture of chocolate-covered raisi ns,

which usually sells for $3 per pound, and chocolate-covered macadamia nuts, which usually sells for $8 per pound. They have a 30-pound barrel of the raisins. How many pounds of the nuts should they mix with the barrel of raisins so that they hit their target value of $6 per pound for the mixture? 152) ____

A) 42 lbs. B) 39 lbs. C) 45 lbs. D) 48 lbs.

153) The manager of a coffee shop has one type of coffee that sells for $8 per pound and another type that sells for $15 per pound. The manager wishes to mix 30 pounds of the $15 coffee to get a mixture that will sell for $10 per pound. How many pounds of the $8 coffee should be used? 153) _____

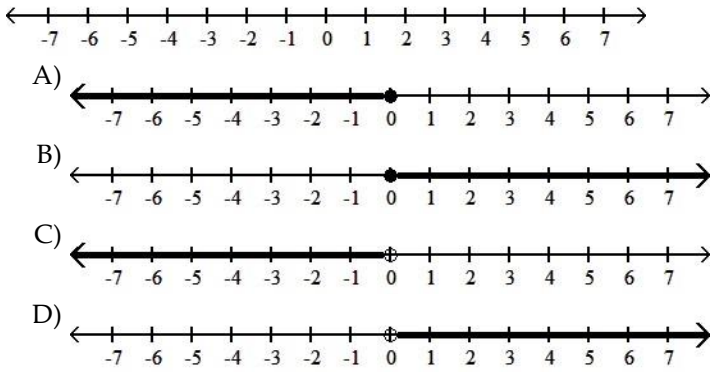
A) 75 pounds B) 37.5 pounds C) 52.5 pounds D) 105 pounds

154) The manager of a candy shop sells chocolate covered peanuts for $8 per pound and chocolate covered cashews for $11 per pound. The manager wishes to mix 80 pounds of the cashews to get a cashew-peanut mixture that will sell for $10 per pound. How many pounds of peanuts should be used? 154) _____

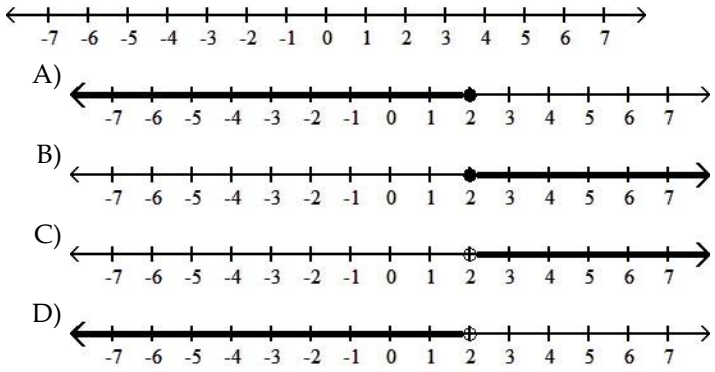
A) 120 pounds B) 60 pounds C) 40 pounds D) 20 pounds

Graph on a number line.

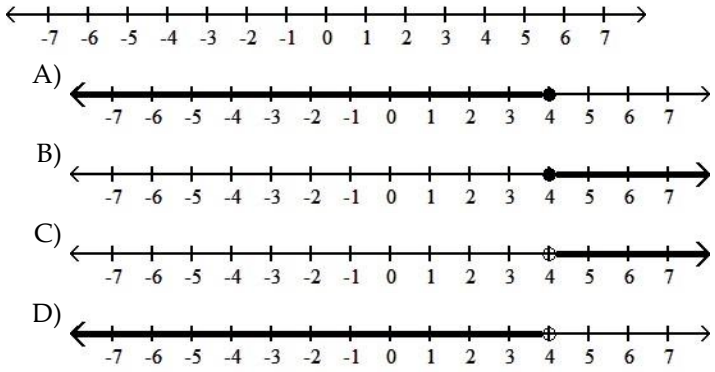
155) $x > 0$ 155) _____



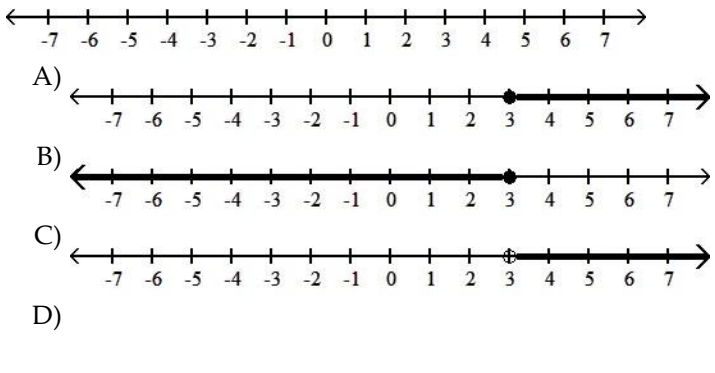
156) $x < 2$ 156) _____

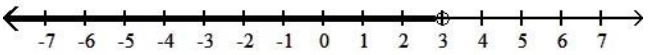


157) $4 \leq x$ 157) _____

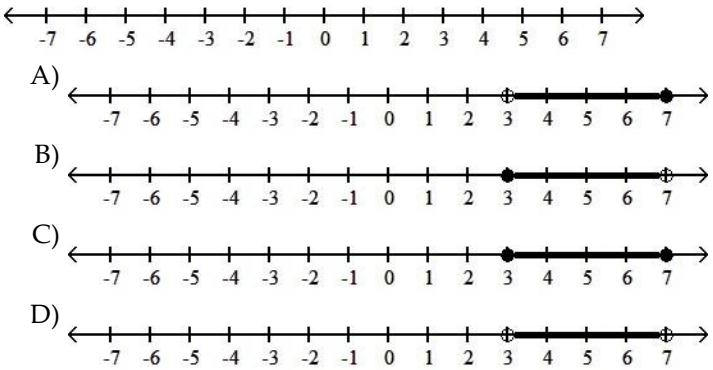


158) $x \leq 3$ 158) _____

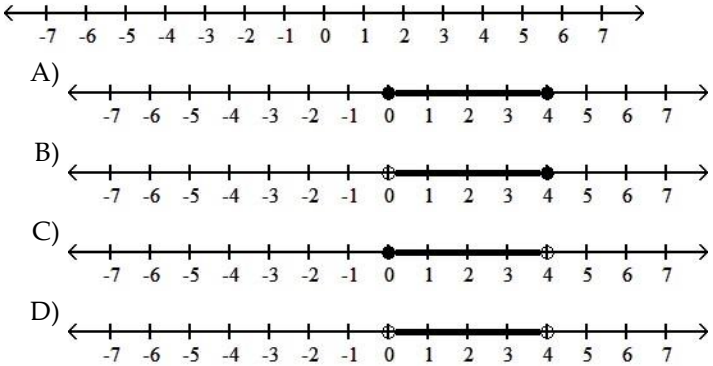




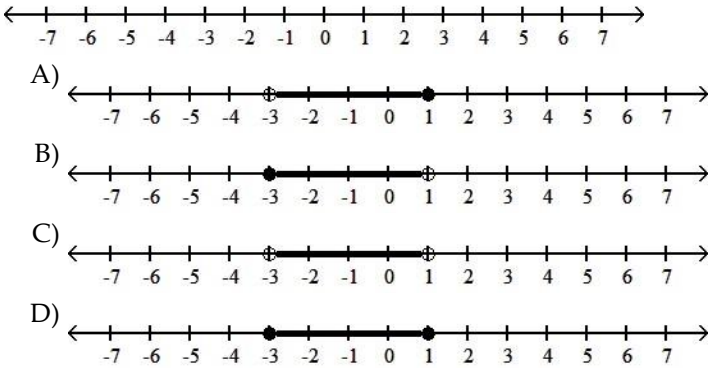
159) $3 \le x \le 7$ 159) _____



160) $0 < x < 4$ 160) _____

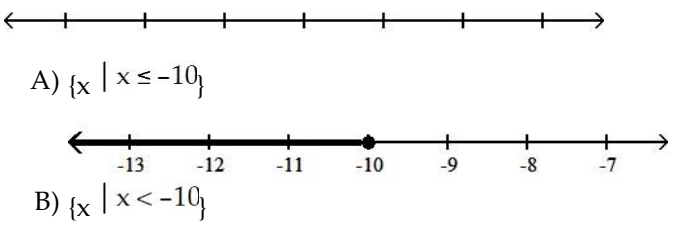


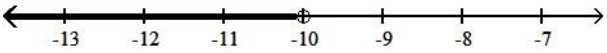
161) $-3 \le x < 1$ 161) _____



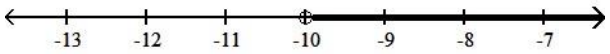
Solve the inequality.

162) $x - 1 < -11$ 162) _____

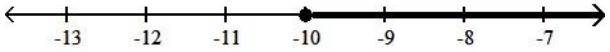




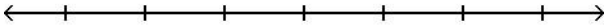
C) $\{x \mid x > -10\}$



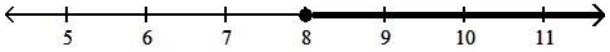
D) $\{x \mid x \geq -10\}$



163) $6x + 7 > 5x + 1$ 163) _____

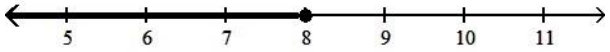


A) $\{x \mid x \geq 8\}$



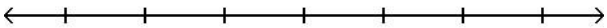
B) $\{x \mid x > -6\}$

C) $\{x \mid x \leq 8\}$



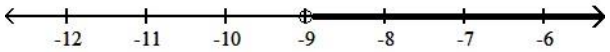
D) $\{x \mid x < -6\}$

164) $-9x - 1 \leq -10x + 7$ 164) _____

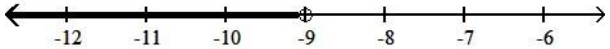


A) $\{x \mid x \leq 8\}$

B) $\{x \mid x > -9\}$

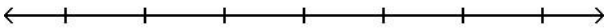


C) $\{x \mid x < -9\}$



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

165) $-8x + 11 \geq -9x + 8$ 165) _____

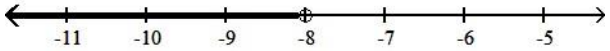


A) $\{x \mid x \geq -3\}$

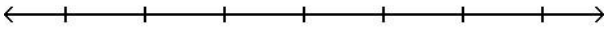
B) $\{x \mid x \leq -3\}$

C) $\{x \mid x > -8\}$

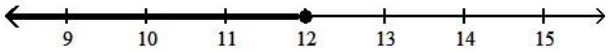
D) $\{x \mid x < -8\}$



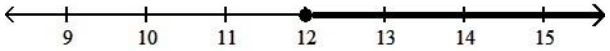
166) $x - 1 < 11$ 166) _____



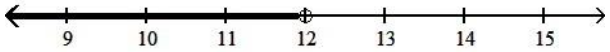
A) $\{x \mid x \leq 12\}$



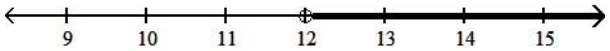
B) $\{x \mid x \geq 12\}$



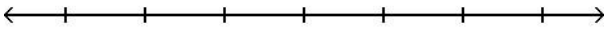
C) $\{x \mid x < 12\}$



D) $\{x \mid x > 12\}$



167) $2 + 7x + 10 \geq 6x + 4$ 167) _____



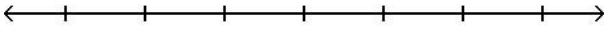
A) $\{x \mid x < 7\}$

B) $\{x \mid x > 7\}$

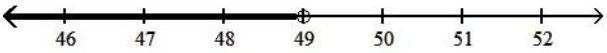
C) $\{x \mid x \leq -8\}$

D) $\{x \mid x \geq -8\}$

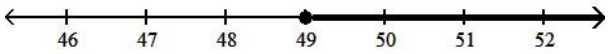
168) $\frac{x}{7} \geq 7$ 168) _____



A) $\{x \mid x < 49\}$



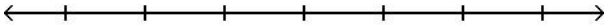
B) $\{x \mid x \geq 49\}$



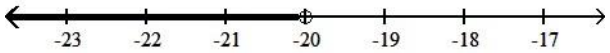
C) $\{x \mid x > 49\}$

D) $\{x \mid x \leq 49\}$

169) $-4 < \frac{y}{5}$ 169) _____

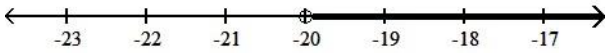


A) $\{y \mid y < -20\}$

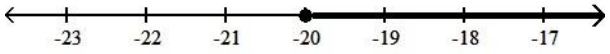


B) $\{y \mid y \leq -20\}$

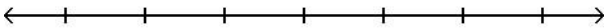
C) $\{y \mid y > -20\}$



D) $\{y \mid y \geq -20\}$



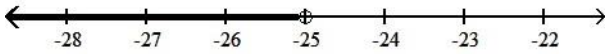
170) $-5 \geq \frac{y}{5}$ 170) _____



A) $\{y \mid y \geq -25\}$

B) $\{y \mid y \leq -25\}$

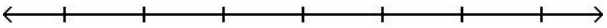
C) $\{y \mid y < -25\}$



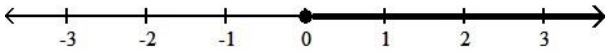
D) $\{y \mid y > -25\}$

171) 0 <

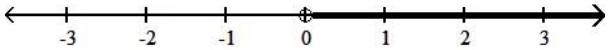
$\frac{y}{2}$ 171) ____



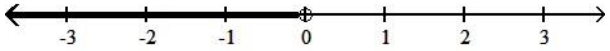
A) $\{ y \mid y \geq 0 \}$



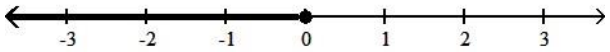
B) $\{ y \mid y > 0 \}$



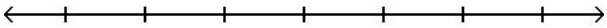
C) $\{ y \mid y < 0 \}$



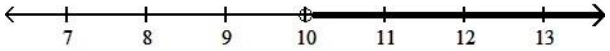
D) $\{ y \mid y \leq 0 \}$



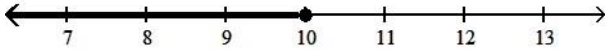
172) $\frac{x}{2} > 5$ 172) _____



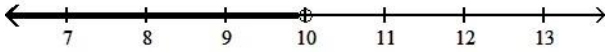
A) $\{ x \mid x > 10 \}$



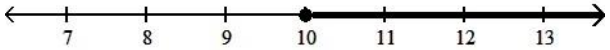
B) $\{ x \mid x \leq 10 \}$



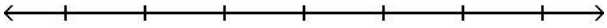
C) $\{ x \mid x < 10 \}$



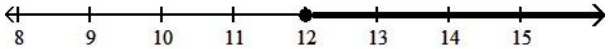
D) $\{ x \mid x \geq 10 \}$



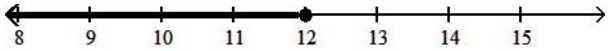
173) $5x > 60$ 173) _____



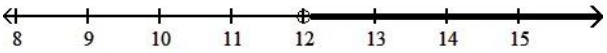
A) $\{x \mid x \geq 12\}$



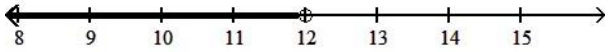
B) $\{x \mid x \leq 12\}$



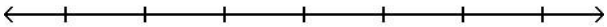
C) $\{x \mid x > 12\}$



D) $\{x \mid x < 12\}$



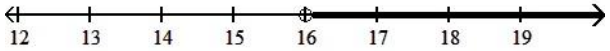
174) $6x \geq 96$ 174) _____



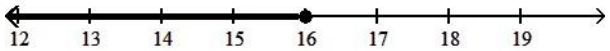
A) $\{x \mid x \geq 16\}$

B) $\{x \mid x < 16\}$

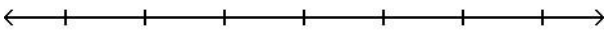
C) $\{x \mid x > 16\}$



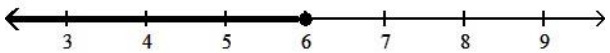
D) $\{x \mid x \leq 16\}$



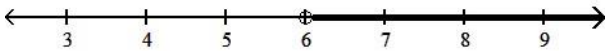
175) $36x - 18 > 6(5x + 3)$ 175) _____



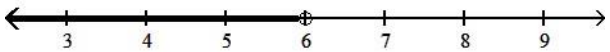
A) $\{x \mid x \leq 6\}$



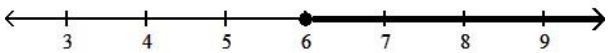
B) $\{x \mid x > 6\}$



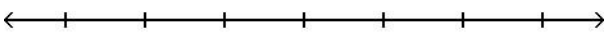
C) $\{x \mid x < 6\}$



D) $\{x \mid x \geq 6\}$



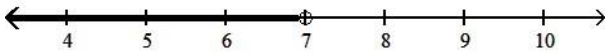
176) $-3(4y + 3) < -15y + 12$ 176) _____



A) $\{y \mid y \geq 7\}$

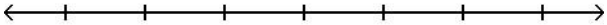
B) $\{y \mid y > 7\}$

C) $\{y \mid y < 7\}$



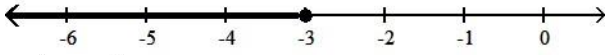
D) $\{y \mid y \leq 7\}$

177) $-42x + 18 \leq -6(6x - 6)$ 177) _____

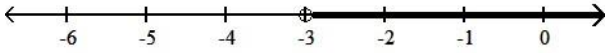


A) $\{x \mid x \geq -3\}$

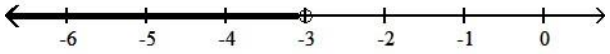
B) $\{x \mid x \leq -3\}$



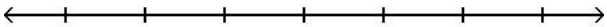
C) $\{x \mid x > -3\}$



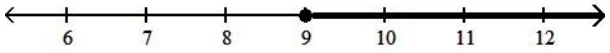
D) $\{x \mid x < -3\}$



178) $10x + 6 \leq 2(4x + 12)$ 178) _____

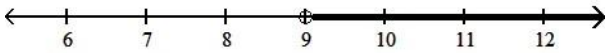


A) $\{x \mid x \geq 9\}$

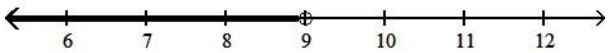


B) $\{x \mid x \leq 9\}$

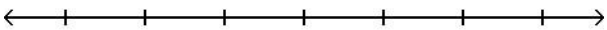
C) $\{x \mid x > 9\}$



D) $\{x \mid x < 9\}$

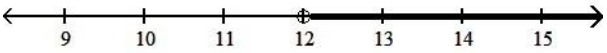


179) $-3x + 6 + 2x < 8 - 3x + 10$ 179) _____

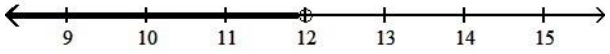


A) $\{x \mid x > 6\}$

B) $\{x \mid x > 12\}$



C) $\{x \mid x < 12\}$



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

Solve.

180) The area of a rectangle must be at least 144 square feet. If the length is 8 feet, find the minimum for the rectangle's width. 180) _____

A) 19 ft B) $\frac{1}{18}$ ft C) 18 ft D) 64 ft

181) Six less than three times a number is less than ten. Find all such numbers. 181) _____

A) $x > -\frac{4}{3}$ B) $x < \frac{4}{3}$ C) $x < \frac{16}{3}$ D) $x < \frac{28}{3}$

182) Claire has received scores of 85, 88, 87, and 90 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 87? (Hint: The average of a list of numbers is their sum divided by the number of numbers in the list.) 182) _____

A) 84 B) 86 C) 85 D) 83

183) A student scored 74, 87, and 91 on three algebra tests. What must he score on the fourth test in order to have an average grade of at least 85? 183) _____

A) 88 B) 63 C) 84 D) 30

184) A certain vehicle has a weight limit for all passengers and cargo of 1194 pounds. The four passengers in the vehicle weigh an average of 170 pounds. Use an inequality to find the maximum weight of the cargo that the vehicle can handle. 184) _____

A) at most 1024 pounds B) at most $\frac{597}{85}$ pounds

C) at most 597 pounds D) at most 514 pounds

185) A certain store has a fax machine available for use by its customers. The store charges $2.35 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 $7.85 185) _____

A) at most 3 pages B) at most 11 pages

C) at most 14 pages D) at most 57 pages

186) An archer has $142 to spend on a new archery set. A certain set containing a bow and three arrows costs $62. With the purchase of this set, he can purchase additional arrows for $5 per arrow. Use an inequality to find the maximum number of arrows he could obtain, including those with the set, for his $142. 186) _____

A) at most 16 arrows B) at most $\frac{142}{5}$ arrows

C) at most 19 arrows D) at most $\frac{71}{31}$ arrows

187) When making a long distance call from a certain pay phone, the first three minutes of a call cost $1.85. After that, each additional minute or portion of a minute of that call costs $0.15. Use an inequality to find the maximum number of minutes one can call long distance for $3.65. 187) _____

A) at most 2 minutes
B) at most 24 minutes
C) at most 15 minutes
D) at most 12 minutes

188) It takes 10 minutes to set up a candy making machine. Once the machine is set up, it produces 20 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. 188) _____

A) at most 1200 candies
B) at most 7000 candies
C) at most 120 candies
D) at most 3400 candies

189) A standard train ticket in a certain city costs $3.00 per ride. People who use the train also have the option of purchasing a frequent rider pass for $18.00 each month. With the pass, a ticket costs only $2.25 per ride. Use an inequality to determine the number of train rides in a month for which purchasing the monthly pass is more economical than purchasing the standard train ticket. 189) _____

A) 23 or more times
B) 25 or more times
C) 24 or more times
D) 26 or more times

Fill in the blank with one of the words or phrases listed below.

no solution	all real numbers	linear equation in one variable
equivalent equations	formula	reversed
linear inequality in one variable	the same	

190) A _____ can be written in the form ax + b = c. 190) _____

A) reversed
B) linear inequality in one variable
C) formula
D) linear equation in one variable

191) Equations that have the same solution are called _____. 191) _____

A) all real numbers
B) reversed
C) the same
D) equivalent equations

192) An equation that describes a known relationship among quantities is called a _____. 192) _____

A) formula
B) linear inequality in one variable
C) no solution
D) linear equation in one variable

193) A _____ can be written in the form ax + b < c, (or >, ≤, ≥). 193) _____

A) linear equation in one variable
B) formula
C) reversed
D) linear inequality in one variable

194) The solution(s) the the equation x + 5 = x + 5 is/are _____. 194) _____

A) no solution
B) reversed
C) the same
D) all real numbers

195) The solution(s) the the equation x + 5 = x + 4 is/are _____. 195) _____

A) the same
B) reversed
C) no solution
D) all real numbers

196) If both sides of an inequality are multiplied or divided by the same positive number, the direction of the inequality symbol is _____. 196) _____

A) the same
B) all real numbers
C) no solution
D) reversed

197) If both sides of an inequality are multiplied or divided by the same negative number, the direction of the inequality symbol is _____. 197) _____

A) reversed
B) no solution
C) the same
D) all real numbers

Solve the equation.

198) $\frac{1}{5}x = 8$ 198) _____

A) 13 B) 1 C) 40 D) 12

199) $5(2z - 2) = 9(z + 4)$ 199) _____

A) 31 B) 26 C) 46 D) -26

200) $-8b + 6 + 6b = -3b + 11$ 200) _____

A) 11 B) -6 C) -11 D) 5

201) $3x + 9 - 9x - 1 = 4x - 10x + 5$ 201) _____

A) -288
B) 0
C) all real numbers
D) no solution

202) $\frac{4(x - 6)}{5} = x - 5$ 202) _____

A) -1 B) 1 C) 29 D) -19

203) $\frac{3(y + 2)}{4} = 2y + 3$ 203) _____

A) $-\frac{6}{5}$ B) $\frac{18}{5}$ C) $-\frac{18}{5}$ D) $\frac{6}{5}$

204) $\frac{1}{2}x + \frac{3}{2} = x - 6$ 204) _____

A) -4 B) 4 C) 8 D) -2

205) $\frac{1}{2}(y - 2) = 4y$ 205) _____

A) $-\frac{7}{2}$ B) $-\frac{2}{7}$ C) $\frac{2}{7}$ D) $\frac{7}{2}$

206) $-0.3(x - 6) + x = 0.5(9 - x)$ 206) _____

A) 13.5 B) 2.25 C) 5.25 D) 1.5

207) $9x + 3(-2x - 4) = -1 - 8x$ 207) _____

A) 1 B) $\frac{13}{5}$ C) $-\frac{13}{11}$ D) - 1

208) $4(x - 4) - 64 = 7x - 3(x + 8)$ 208) _____

A) -88 B) -40

C) all real numbers D) no solution

Solve the application.

209) The difference of a number and 7 is the same as 39 less the number. Find the number. 209) _____

A) -16 B) 16 C) -23 D) 23

210) A canvas for a mural is in the shape of a right triangle. Before the mural can be painted, the canvas must be varnished. The base of the mural is 5 meters and the height of the mural is 13 meters How many cans of varnish will you need if each can covers 10 square meters? The formula for the area of a right triangle is $A = \frac{1}{2}bh.$ 210) _____

A) 33 cans of varnish B) 7 cans of varnish

C) 4 cans of varnish D) 13 cans of varnish

Substitute the given values into the formula and solve for the unknown variable.

211) $P = 2L + 2W$; $P = 18$, $W = 2$ 211) _____

A) 9 B) 8 C) 7 D) 16

Solve the equation for the indicated variable.

212) $I = Prt$ for r 212) _____

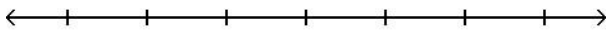
A) $r = \frac{P - I}{1 + t}$ B) $r = \frac{P - 1}{It}$ C) $r = P - I t$ D) $r = \frac{I}{Pt}$

213) $4x - 3y = 15$ for y 213) _____

A) $y = \frac{4x + 15}{-3}$ B) $y = \frac{4x - 15}{3}$ C) $y = \frac{4x + 15}{3}$ D) $y = \frac{4x - 15}{-3}$

Solve the inequality. Graph the solution set.

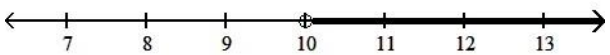
214) $8x - 8 > 7x + 2$ 214) _____



A) $\{x \mid x \le -6\}$

B) $\{x \mid x \ge -6\}$

C) $\{x \mid x > 10\}$



D) $\{x \mid x < 10\}$

215) $-6x - 1 \ge -7x + 8$

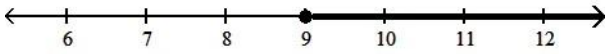
215) _____

A) $\{x \mid x \leq 9\}$

B) $\{x \mid x < -6\}$

C) $\{x \mid x > -6\}$

D) $\{x \mid x \geq 9\}$



Solve the inequality.

216) $-0.9x \geq 1.8$ 216) _____

A) $\{x \mid x \leq -2\}$ B) $\{x \mid x \geq -2\}$ C) $\{x \mid x \geq -0.2\}$ D) $\{x \mid x \leq -0.2\}$

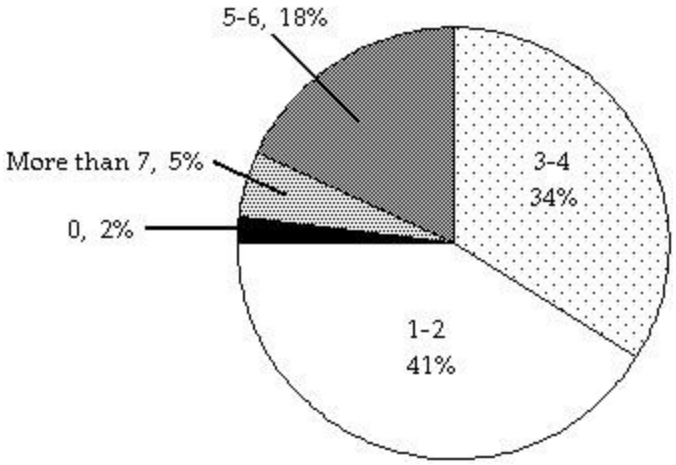
217) $-5(x - 2) + 4 \leq -3(x - 1) + 1$ 217) _____

A) $\{x \mid x \geq 5\}$ B) $\{x \mid x \geq 10\}$ C) $\{x \mid x \leq 5\}$ D) $\{x \mid x \geq -5\}$

218) $\frac{2(4x + 9)}{5} > 4$ 218) _____

A) $\{x \mid x > \frac{1}{4}\}$ B) $\{x \mid x > \frac{5}{2}\}$ C) $\{x \mid x < \frac{1}{4}\}$ D) $\{x \mid x > 1\}$

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



219) What percent of college students do not consume any pizza in a typical month? 219) _____

A) 34% B) 5% C) 18% D) 2%

220) If State University has approximately 48,000 students, about how many would you expect to consume 5-6 pizzas in a typical month? 220) _____

A) 16,320 students B) 1632 students C) 864 students D) 8640 students

Solve the problem.

221) The number 88 is what percent of 600? Round to the nearest hundredth, if necessary. 221) _____

A) 50% B) 0.15% C) 6.82% D) 70%

222) There are 14 more sophomores than juniors in an 8 AM algebra class. If there are 68 students in this class, find the number of sophomores and the number of juniors in the class. 222) _____

A) 68 sophomores; 54 juniors B) 27 sophomores; 41 juniors

C) 82 sophomores; 54 juniors D) 41 sophomores; 27 juniors

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

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

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

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

208) D
209) D
210) C
211) C
212) D
213) B
214) C
215) D
216) A
217) A
218) A
219) D
220) D
221) B
222) D