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

Solve the equation.

1) $-2a = 10$
A) 1 B) -5 C) 12 D) -12
Answer: B

2) $3x - 8 = 16$
A) 25 B) 8 C) 13 D) 21
Answer: B

3) $35 = -10x + 5$
A) 40 B) 44 C) 8 D) -3
Answer: D

4) $8x - 10 = 3x + 5$
A) -3 B) -1 C) 3 D) 1
Answer: C

5) $8(y + 2) = 10y + 16$
A) 16 B) 32 C) -16 D) 0
Answer: D

6) $7x + 8 = 8(x - 6)$
A) -40 B) 40 C) 56 D) -56
Answer: C

7) $4(3x - 22) = 12x - 88$
A) all real numbers B) $-\frac{11}{6}$ C) $\varnothing$ D) $-\frac{22}{3}$
Answer: A

8) $3(5x + 3) + 50 = 8x - 4$
A) -63 B) -441 C) -9 D) 9
Answer: C

9) $-8x + 8 + 2x - 9 = 1$
A) $-\frac{1}{3}$ B) $-\frac{1}{5}$ C) $\frac{1}{3}$ D) -3
Answer: A

10) $3x + 2 - 3x - 7 = 2x - 2x - 8$
A) 0 B) $\varnothing$ C) -96 D) all real numbers
Answer: B

11) $7x = 5(9x + 2)$
A) $\frac{5}{19}$ B) $-\frac{5}{19}$ C) $\frac{19}{5}$ D) $\frac{10}{7}$
Answer: B

12) $12(7x - 2) = 9x - 6$

A) $\frac{2}{5}$ B) $-\frac{6}{25}$ C) $\frac{6}{25}$ D) $\frac{6}{31}$

Answer: C

13) $-36(x - 8) = -24(x - 12)$

A) all real numbers B) 0 C) –60 D) ∅

Answer: B

14) $2(x + 8) = 3(x - 8)$

A) ∅ B) all real numbers C) 40 D) –8

Answer: C

15) $(x - 9) - (x + 6) = 5x$

A) $-\frac{15}{7}$ B) $\frac{1}{5}$ C) – 3 D) $-\frac{5}{3}$

Answer: C

16) $-3(k - 5) - (-4k - 2) = 4$

A) 21 B) – 13 C) – 7 D) 13

Answer: B

17) $7(x - 3) - 35 = 9x - 2(x + 1)$

A) –37 B) –33 C) all real numbers D) ∅

Answer: D

18) $\frac{2}{3} - \frac{x}{4} = \frac{1}{12}$

A) $\frac{7}{3}$ B) $-\frac{7}{4}$ C) $\frac{7}{4}$ D) $-\frac{7}{3}$

Answer: A

19) $\frac{x}{10} = \frac{x}{9} + \frac{1}{10}$

A) – 9 B) 0 C) $-\frac{1}{9}$ D) $-\frac{1}{10}$

Answer: A

20) $\frac{x}{3} - \frac{x}{4} = 9$

A) 36 B) 12 C) 108 D) 27

Answer: C

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

A) –30 B) 60 C) –60 D) 30

Answer: D

22) $\frac{x}{7} - 13 = \frac{x}{7}$

A) $\frac{91}{2}$ B) all real numbers C) ∅ D) 0

Answer: C

23) $\frac{7x}{4} + \frac{1}{2} = \frac{3x}{2}$

A) –8 B) 8 C) 2 D) –2

Answer: D

24) $\frac{x+4}{6} + \frac{x-1}{2} = \frac{5}{6}$

A) 0 B) 10 C) $\frac{7}{2}$ D) 1

Answer: D

25) $\frac{x+3}{3} - \frac{3x-12}{11} = 1$

A) – 6 B) 18 C) – 18 D) –36

Answer: C

26) $\frac{1}{4}(x-12) - \frac{1}{9}(x-9) = x-5$

A) $\frac{252}{31}$ B) $\frac{108}{31}$ C) $\frac{324}{31}$ D) $\frac{36}{31}$

Answer: B

27) $\frac{1}{5}(10x-15) = 6\left(\frac{x}{3} - \frac{1}{2}\right) + 5$

A) 0 B) $\frac{5}{4}$ C) all real numbers D) ∅

Answer: D

28) $x + 9.8 = 15.4$

A) 25.2 B) 5.6 C) –5.6 D) –25.2

Answer: B

29) $x - 3.7 = -6.9$

A) 10.6 B) –3.2 C) –10.6 D) 3.2

Answer: B

30) $9x + 1.2 = -17.7$

A) –5.8 B) –2.1 C) –3.5 D) –5.4

Answer: B

31) $-47.4 - 8x = 1.4$

A) -6.8 B) -6.6 C) -6.1 D) -7.4

Answer: C

32) $1.5x + 2.8 = 0.7x - 0.08$

A) -3.564 B) -3.6 C) -3.59 D) 0.278

Answer: B

33) $2.6m + 6.9 - 4.9m = -7.2 - 2.3m + 14.1$

A) $\varnothing$ B) 0 C) -4.1 D) all real numbers

Answer: D

34) $0.09(5x + 1) = 0.45(x + 7) - 3.06$

A) -3.06 B) 0.09 C) $\varnothing$ D) all real numbers

Answer: D

35) $x(2x - 1) + 2 = 2x(x - 2) + x$

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

Answer: C

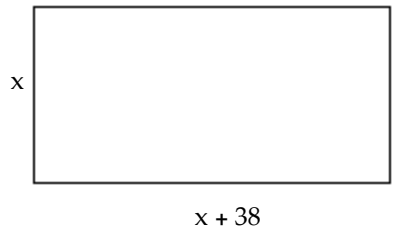
36) $x(x + 8) - 8 = x^2 + 3x + 1$

A) $\frac{8}{5}$ B) $\frac{9}{8}$ C) $\frac{9}{5}$ D) 9

Answer: C

Write the following as an algebraic expression. Then simplify.

37) The perimeter of the rectangle with width x and length x + 38.



A) $x^2 + 38x$ B) $4x + 76$ C) $2x + 38$ D) $4x + 38$

Answer: B

38) The sum of three even consecutive integers if the first integer is y.

A) $3y$ B) $3y + 3$ C) $3y + 6$ D) 6

Answer: C

39) The perimeter of a triangle whose sides are of lengths 5x, 5x + 9, and x.

A) $10x + 9$ B) $11x + 9$ C) $19x$ D) $25x^2 + 45x$

Answer: B

40) The sum of three consecutive integers if the last integer is z.

A) 3z + 6 B) 3z C) 3z – 3 D) 3z + 3

Answer: C

41) The perimeter of a square with sides of length x + 5.

A) 4x + 20 B) x + 20 C) 4x + 5 D) x^2 + 10x + 25

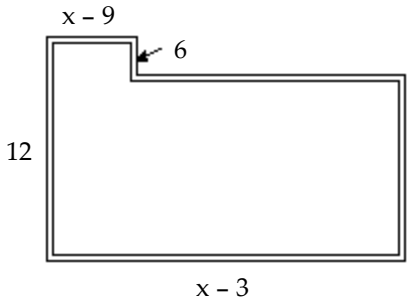
Answer: A

42) The total value of money (in cents) of (4x – 2) nickels, 6x dimes, and x quarters.

A) (105x – 2) cents B) (105x – 10) cents C) (80x – 10) cents D) (105x + 10) cents

Answer: B

43) The perimeter of the floor plan shown.



A) 48 B) 2x C) 2x + 48 D) 2x + 18

Answer: D

Solve.

44) Three times the sum of some number plus 3 is equal to 7 times the number minus 15.

A) –24 B) 6 C) –6 D) 24

Answer: B

45) The difference of a number and 7 is the same as 49 less the number. Find the number.

A) 28 B) –28 C) –21 D) 21

Answer: A

46) Seven times some number added to 4 amounts to 32 added to the product of 3 and the number.

A) –28 B) 7 C) 28 D) –7

Answer: B

47) Find 90% of 60.

A) 5400 B) 54 C) 540 D) 600

Answer: B

48) Find 13% of 3000.

A) 390 B) 39 C) 3900 D) 39,000

Answer: A

49) Find 14% of 26.

A) 0.364 B) 364 C) 3.64 D) 36.4

Answer: C

50) A region consists of 2545 thousand acres of farm land. If 28% of this land is privately owned, find how may acres are not privately owned.

A) 1832.4 acres
B) 712.6 acres
C) 712.6 thousand acres
D) 1832.4 thousand acres

Answer: D

51) A diamond ring sold for $2776.80 including tax. If the tax rate where the diamond was purchased is 6.8%, find the price of the ring before the tax was added. (Round to the nearest cent, if necessary.)

A) $188.82
B) $2600.00
C) $2587.98
D) $2965.62

Answer: B

52) The three most prominent buildings in a city, Washington Center, Lincoln Galleria, and Jefferson Square Tower, have a total height of 1800 feet. Find the height of each building if Jefferson Square Tower is twice as tall as Lincoln Galleria and Washington Center is 120 feet taller than Lincoln Galleria.

A) Washington Center: 720 feet
Lincoln Galleria: 360 feet
Jefferson Square Tower: 720 feet
B) Washington Center: 540 feet
Lincoln Galleria: 420 feet
Jefferson Square Tower: 840 feet
C) Washington Center: 680 feet
Lincoln Galleria: 340 feet
Jefferson Square Tower: 780 feet
D) Washington Center: 480 feet
Lincoln Galleria: 360 feet
Jefferson Square Tower: 960 feet

Answer: B

53) The sum of three consecutive even integers is 330. Find the integers.

A) 108, 110, 112
B) 110, 112, 114
C) 109, 110, 111
D) 106, 108, 110

Answer: A

54) The population of a town increased by 20% in 5 years. If the population is currently28,000, find the population of this town 5 years ago. (Round to the nearest whole, if necessary.)

A) 23,333
B) 22,400
C) 140,000
D) 5600

Answer: A

55) Find the measures of the angles of a triangle if the measure of the first angle is twice the measure of the second angle and the third angle is 40° more than the second angle.

A) 55°, 15°, 110°
B) 30°, 15°, 135°
C) 75°, 35°, 70°
D) 56°, 28°, 96°

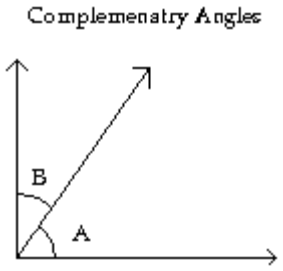
Answer: C

56) A publisher printed 62 million pages in its production process last year. If this represents a 124% over the number of pages printed the previous year, how many pages were printed the previous year? (Round to the nearest hundredth million, if necessary.)

A) 153.76 million pages
B) 50 million pages
C) 15,376 million pages
D) 500 million pages

Answer: B

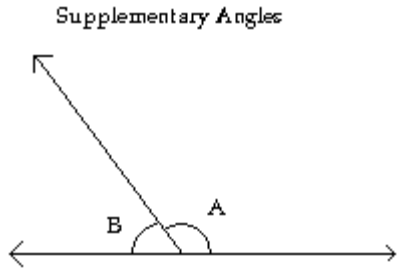
57) Recall that two angles are complements of each other if their sum is 90°. Angle A and angle B are complementary angles and angle A is 2° more than three times angle B. Find the measures of angle A and angle B.



A) A = 48°, B = 42° B) A = 22°, B = 68° C) A = 42°, B = 48° D) A = 68°, B = 22°

Answer: D

58) Rcall that two angles are supplements of each other if their sum is 180°. Angle A and angle B are supplementary angles and angle A is 25° less than four times angle B. Find the measures of angle A and angle B.



A) A = 139°, B = 41° B) A = 149°, B = 31°
C) A = 164°, B = 16° D) A = 128.3°, B = 51.7°

Answer: A

59) The cost C to produce x number of tennis rackets is C = 140 + 25x. The tennis rackets are sold wholesale for $30 each, so revenue R is given by R = 30x. Find how many tennis rackets the manufacturer needs to produce and sell to break even.

A) 14 tennis rackets B) 33 tennis rackets C) 28 tennis rackets D) 23 tennis rackets

Answer: C

Solve the formula for the specified variable.

60) d = rt for t

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

Answer: B

61) I = Prt for r

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

Answer: B

62) $A = \frac{1}{2}bh$ for h

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

Answer: B

63) $V = \frac{1}{3}Bh$ for B

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

Answer: A

64) $P = a + b + c$ for a

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

Answer: A

65) $P = 2L + 2W$ for L

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

Answer: B

66) $A = P + PRT$ for R

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

Answer: B

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

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

Answer: C

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

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

Answer: C

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

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

Answer: B

Use the formula $A = P\left(1 + \frac{r}{n}\right)^{nt}$ to find the amount requested.

70) A principal of $1,000 is invested in an account paying an annual interest rate of 10%. Find the amount in the account after 11 years if the account is compounded annually.
A) $2593.74 B) $2853.12 C) $3138.43 D) $1853.12
Answer: B

71) A principal of $1,000 is invested in an account paying an annual interest rate of 11%. Find the amount in the account after 11 years if the account is compounded semiannually.
A) $3247.54 B) $3151.76 C) $2247.54 D) $3078.23
Answer: A

72) A principal of $14,000 is invested in an account paying an annual interest rate of 6%. Find the amount in the account after 5 years if the account is compounded semiannually.
A) $4814.83 B) $18,266.82 C) $18,814.83 D) $18,735.16
Answer: C

73) A principal of $480 is invested in an account paying an annual interest rate of 18%. Find the amount in the account after 7 years if the account is compounded quarterly.
A) $1529.03 B) $1166.26 C) $1575.36 D) $1646.26
Answer: D

74) A principal of $12,000 is invested in an account paying an annual interest rate of 6%. Find the amount in the account after 6 years if the account is compounded quarterly.
A) $17,022.23 B) $16,900.53 C) $17,154.03 D) $5154.03
Answer: C

Solve.

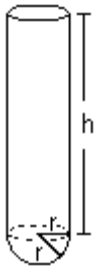
75) Use the formula $F = \frac{9}{5}C + 32$ to write 20° C as degrees Fahrenheit.
A) −6.6° F B) 4° F C) 29° F D) 68° F
Answer: D

76) Use the formula $C = \frac{5}{9}(F - 32)$ to write 203° F as degrees Celsius.
A) 95° C B) 80.8° C C) 130.6° C D) 397.4° C
Answer: A

77) It took Sara's mother 6 hours round trip to drive to the University and bring Sara back home for spring break. If the University is 111 miles from home, find her mother's average speed.
A) 38 mph B) $18\frac{1}{2}$ mph C) $55\frac{1}{2}$ mph D) 37 mph
Answer: D

78) You are varnishing the background for a rectangular mural. The base of the mural is $7\frac{1}{2}$ meters and the height of the mural is 3 meters. How many cans of varnish will you need if each can covers 10 square meters?
A) 9 cans of varnish B) 23 cans of varnish C) 3 cans of varnish D) 5 cans of varnish
Answer: C

79) A manufacturing company was asked to make a special testtube with dimensions r = 1.1 cm and h = 9.8 cm as shown on the figure. If the body of the test tube is a cylinder and the bottom is a hemisphere, find the volume of the testtube. Round to two decimal places when necessary, using 3.14 for π.

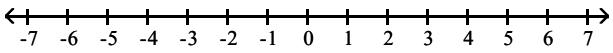


A) 42.81 cu. cm B) 40.02 cu. cm C) 50.22 cu. cm D) 38.63 cu. cm

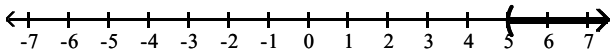
Answer: B

Graph the solution set of the inequality and write it in interval notation.

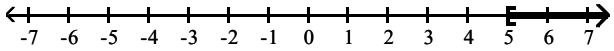
80) $\{x \mid x > 5\}$



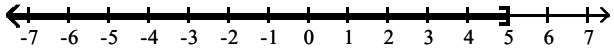
A) (5, ∞)



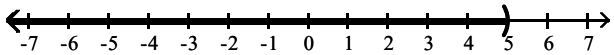
B) [5, ∞)



C) (−∞, 5]

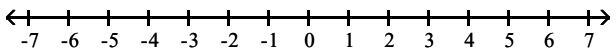


D) (−∞, 5)

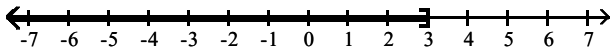


Answer: A

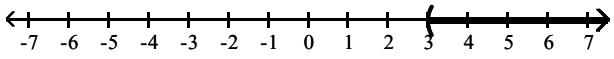
81) $\{x \mid x < 3\}$



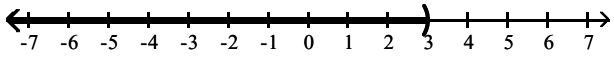
A) $(-\infty, 3]$



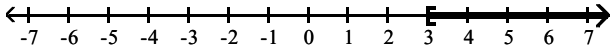
B) $(3, \infty)$



C) $(-\infty, 3)$

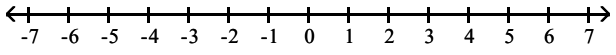


D) $[3, \infty)$

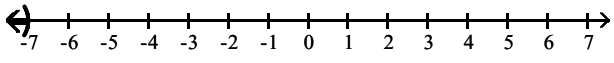


Answer: C

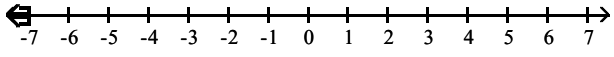
82) $\{x \mid x \geq -7\}$



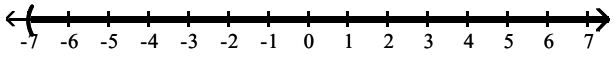
A) $(-\infty, -7)$



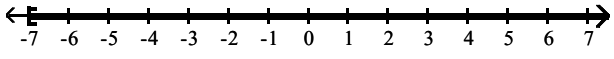
B) $(-\infty, -7]$



C) $(-7, \infty)$

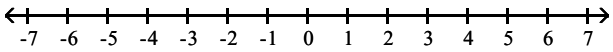


D) $[-7, \infty)$

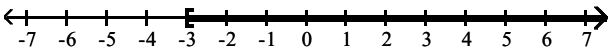


Answer: D

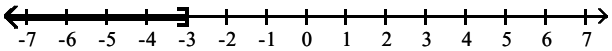
83) $\{x \mid x \leq -3\}$



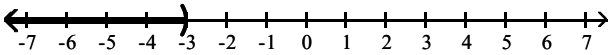
A) $[-3, \infty)$



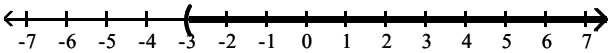
B) $(-\infty, -3]$



C) $(-\infty, -3)$

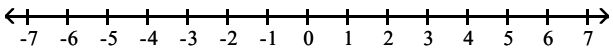


D) $(-3, \infty)$

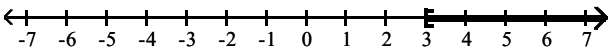


Answer: B

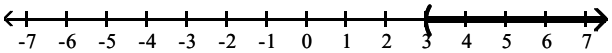
84) $\{x \mid 3 < x\}$



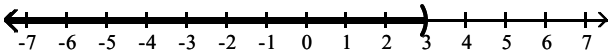
A) $[3, \infty)$



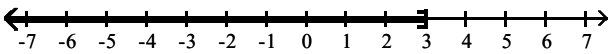
B) $(3, \infty)$



C) $(-\infty, 3)$

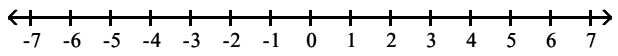


D) $(-\infty, 3]$

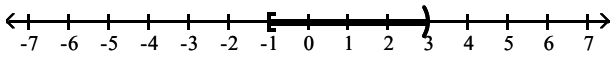


Answer: B

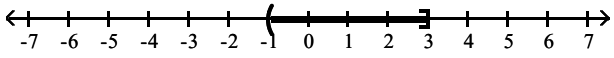
85) $\{x \mid -1 \le x \le 3\}$



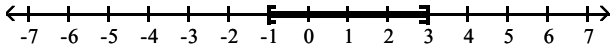
A) [–1, 3)



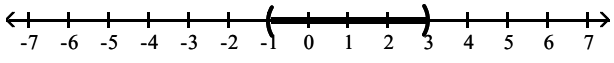
B) (–1, 3]



C) [–1, 3]

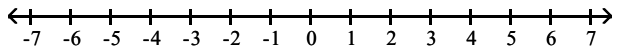


D) (–1, 3)

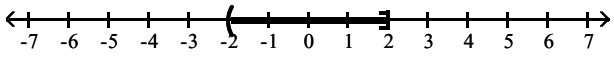


Answer: C

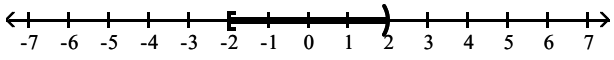
86) $\{x \mid -2 < x < 2\}$



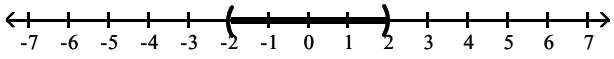
A) (–2, 2]



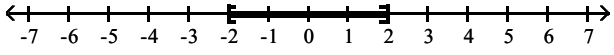
B) [–2, 2)



C) (–2, 2)

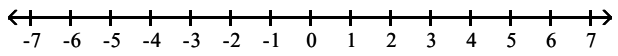


D) [–2, 2]

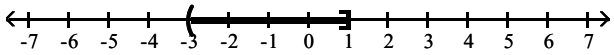


Answer: C

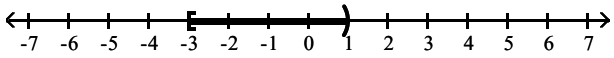
87) $\{x \mid -3 \leq x < 1\}$



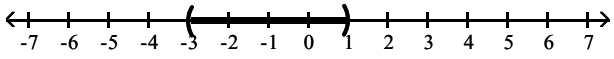
A) (–3, 1]



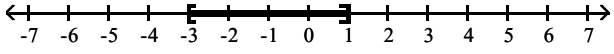
B) [–3, 1)



C) (–3, 1)

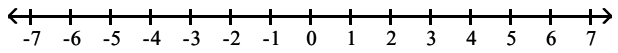


D) [–3, 1]

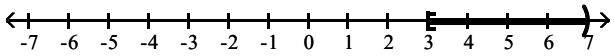


Answer: B

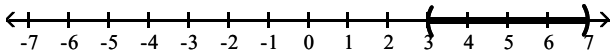
88) $\{x \mid 7 \geq x \geq 3\}$



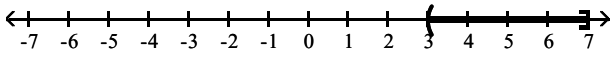
A) [3, 7)



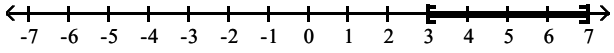
B) (3, 7)



C) (3, 7]



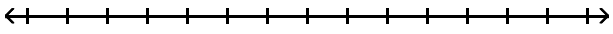
D) [3, 7]



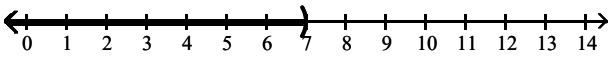
Answer: D

Solve the inequality. Write the solution set in interval notation and graph the solution set.

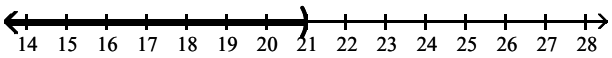
89) $a + 7 < 14$



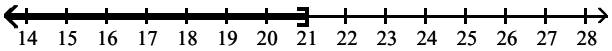
A) $(-\infty, 7)$



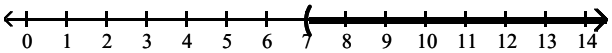
B) $(-\infty, 21)$



C) $(-\infty, 21]$

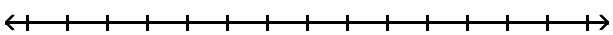


D) $(7, \infty)$

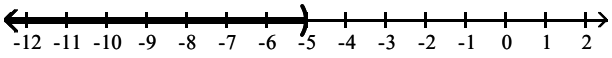


Answer: A

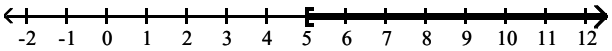
90) $6z > 5z - 5$



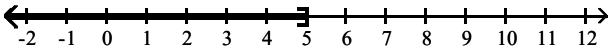
A) $(-\infty, -5)$



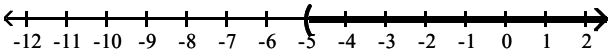
B) $[5, \infty)$



C) $(-\infty, 5]$

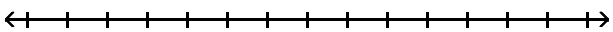


D) $(-5, \infty)$

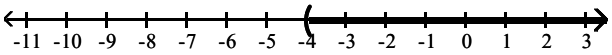


Answer: D

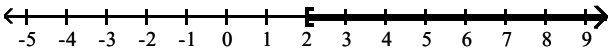
91) $3z - 3 > 2z - 1$



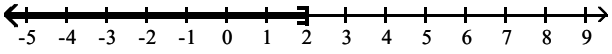
A) $(-4, \infty)$



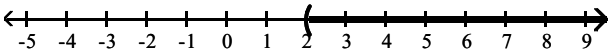
B) $[2, \infty)$



C) $(-\infty, 2]$

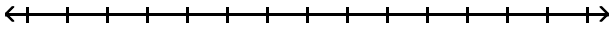


D) $(2, \infty)$

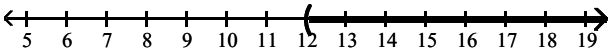


Answer: D

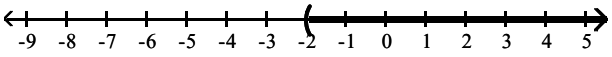
92) $7z + 7 \geq 6z + 5$



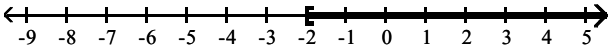
A) $(12, \infty)$



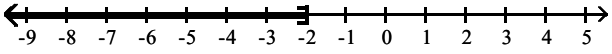
B) $(-2, \infty)$



C) $[-2, \infty)$

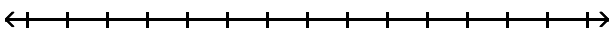


D) $(-\infty, -2]$

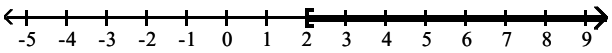


Answer: C

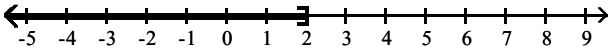
93) $f - 5 < -3$



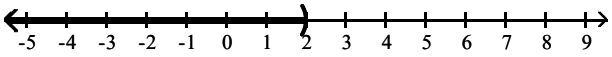
A) $[2, \infty)$



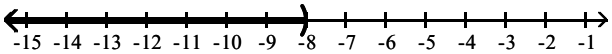
B) $(-\infty, 2]$



C) $(-\infty, 2)$

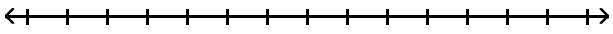


D) $(-\infty, -8)$

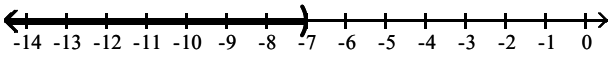


Answer: C

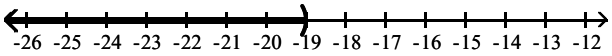
94) $f - 6 \leq -13$



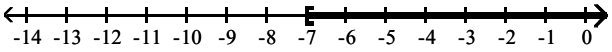
A) $(-\infty, -7)$



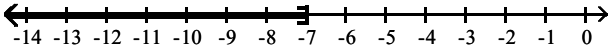
B) $(-\infty, -19)$



C) $[-7, \infty)$

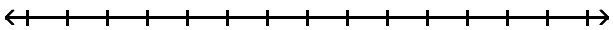


D) $(-\infty, -7]$

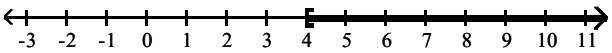


Answer: D

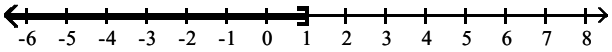
95) $8z - 2 \geq 7z - 2$



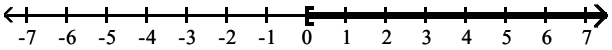
A) [4, ∞)



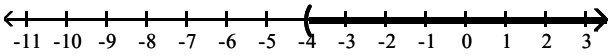
B) (−∞, 1]



C) [0, ∞)

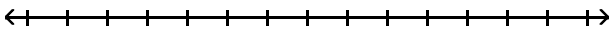


D) (– 4, ∞)

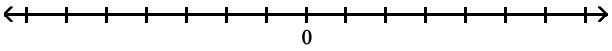


Answer: C

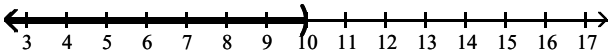
96) $4x + 7 < 4(x + 10)$



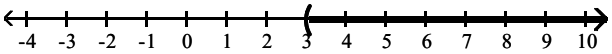
A) ∅



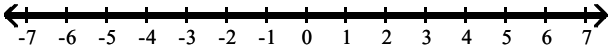
B) (−∞, 10)



C) (3, ∞)

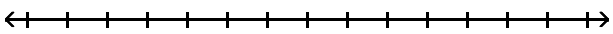


D) (−∞, ∞)

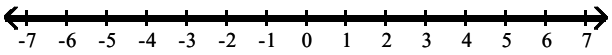


Answer: D

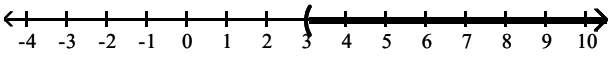
97) $4x + 2 > 4(x + 5)$



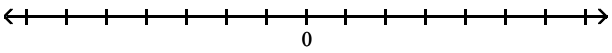
A) $(-\infty, \infty)$



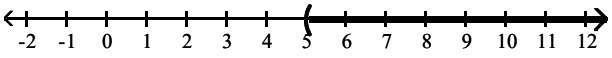
B) $(3, \infty)$



C) $\varnothing$



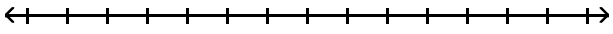
D) $(5, \infty)$



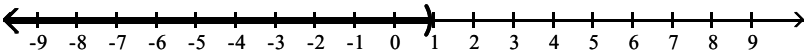
Answer: C

Graph the solution set of the inequality and write it in interval notation.

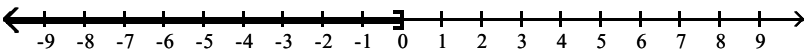
98) $\frac{1}{8}x \geq 9$



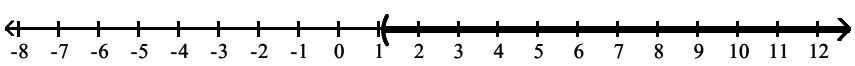
A) $\left(-\infty, \frac{8}{9}\right)$



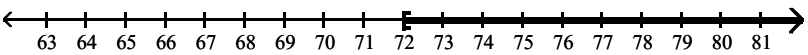
B) $\left(-\infty, \frac{1}{72}\right]$



C) $\left(\frac{9}{8}, \infty\right)$

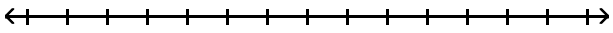


D) $[72, \infty)$

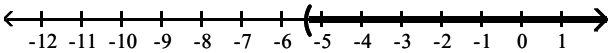


Answer: D

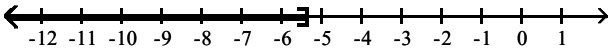
99) $7x < -37.8$



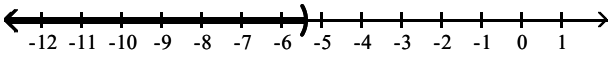
A) $(-5.4, \infty)$



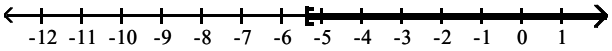
B) $(-\infty, -5.4]$



C) $(-\infty, -5.4)$

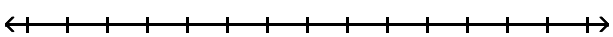


D) $[-5.4, \infty)$

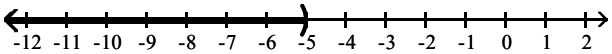


Answer: C

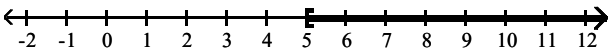
100) $4a \geq 20$



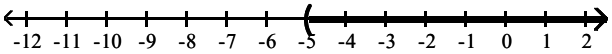
A) $(-\infty, -5)$



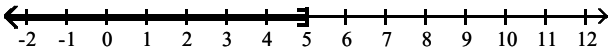
B) $[5, \infty)$



C) $(-5, \infty)$

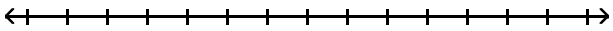


D) $(-\infty, 5]$

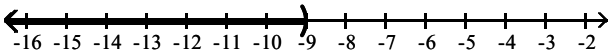


Answer: B

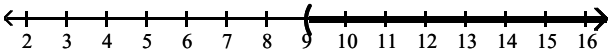
101) $-x < -9$



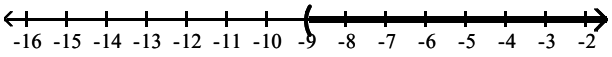
A) $(-\infty, -9)$



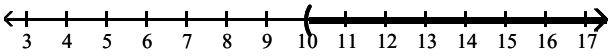
B) $(9, \infty)$



C) $(-9, \infty)$



D) $[10, \infty)$



Answer: B

Write the solution set using interval notation.

102) $24 - 4x \le -4$

A) $(-\infty, -7)$ B) $[-7, \infty)$ C) $(-\infty, 7)$ D) $[7, \infty)$

Answer: D

103) $8x + 6 \ge 2x - 12$

A) $[-3, \infty)$ B) $(-\infty, 3]$ C) $(-\infty, -3)$ D) $(3, \infty)$

Answer: A

104) $3(x + 7) \le 4(x - 8)$

A) $(-\infty, -11]$ B) $[53, \infty)$ C) $(-\infty, 53)$ D) $(-11, \infty)$

Answer: B

105) $\frac{3}{4} + \frac{5}{6} \le \frac{x}{24}$

A) $(-\infty, 38]$ B) $(38, \infty)$ C) $[38, \infty)$ D) $(-\infty, 38)$

Answer: C

106) $4(y + 1) \le 4y + 60$

A) $[4, \infty)$ B) $\varnothing$ C) $(-\infty, \infty)$ D) $[0, \infty)$

Answer: C

107) $5(7x + 1) - 5 < 7(5x - 7) + 2$

A) $(-\infty, \infty)$ B) $(-\infty, -47)$ C) $\varnothing$ D) $\left(-\infty, -\frac{47}{35}\right)$

Answer: C

108) $11(14 - x) \ge 154$

A) $(-\infty, 0]$ B) $[-308, \infty)$ C) $[0, \infty)$ D) $(-\infty, 308]$

Answer: A

109) $7(6x + 1) > 7$

A) $[0, \infty)$ B) $\left[\frac{1}{42}, \infty\right)$ C) $(0, \infty)$ D) $\left(\frac{1}{42}, \infty\right)$

Answer: C

110) $\frac{5x - 14}{2} < -27$

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

Answer: C

111) $\frac{-7x - 20}{4} < 37$

A) $(-\infty, -24)$ B) $[-24, \infty)$ C) $(-\infty, -24]$ D) $(-24, \infty)$

Answer: D

112) $\frac{5x - 35}{12} < 0$

A) $(-\infty, 0)$ B) $(-\infty, \infty)$ C) $(-\infty, 7)$ D) $\varnothing$

Answer: C

113) $8x + 5.8 < 5x - 5$

A) $(-\infty, -3.6]$ B) $[-3.6, \infty)$ C) $(-\infty, -3.6)$ D) $(-3.6, \infty)$

Answer: C

114) $2x - 5.5 < 5x + 8$

A) $(-\infty, -4.5)$ B) $[-4.5, \infty)$ C) $(-4.5, \infty)$ D) $(-\infty, -4.5]$

Answer: C

115) $5(4x - 1) > 20$

A) $\left[\frac{21}{20}, \infty\right)$ B) $\left(\frac{3}{4}, \infty\right)$ C) $\left[\frac{19}{20}, \infty\right)$ D) $\left(\frac{5}{4}, \infty\right)$

Answer: D

116) $-7(y - 2) \leq -9y + 14$

A) $[28, \infty)$ B) $(0, \infty)$ C) $(-\infty, 14)$ D) $(-\infty, 0]$

Answer: D

117) $\frac{1}{3}(5x - 12) \geq x - 2$

A) $\left(-\infty, 3\right)$ B) $\left(-\infty, 3\right]$ C) $\left(3, \infty\right)$ D) $\left[3, \infty\right)$

Answer: D

118) $3(3x - 4) - 18 \leq 2x - 2$

A) $(-\infty, 4)$ B) $(-\infty, 4]$ C) $(-4, \infty)$ D) $[-4, \infty)$

Answer: B

119) $1.2x - 3 - 0.7x \geq 12.5$

A) $(-\infty, 31)$ B) $[31, \infty)$ C) $(3.1, \infty)$ D) $(-\infty, 31]$

Answer: B

120) $\frac{1}{5}(2x + 11) > \frac{3}{10}(x - 1)$

A) $(-25, \infty)$ B) $(-\infty, 25)$ C) $(19, \infty)$ D) $(-\infty, 14)$

Answer: A

121) $\frac{5x + 1}{16} - \frac{1 + 3x}{8} \leq -\frac{1}{2}$

A) $[-7, \infty)$ B) $(7, \infty)$ C) $(-\infty, 7]$ D) $[7, \infty)$

Answer: D

Solve.

122) A student scored 71, 73, and 99 on three algebra tests. What must he score on the fourth test in order to have an average grade of at least 85?

A) 61 B) 97 C) 29 D) 81

Answer: B

123) A certain vehicle has a weight limit for all passengers and cargo of 1226 pounds. The four passengers in the vehicle weigh an average of 175 pounds. Use an inequality to find the maximum weight of the cargo that the vehicle can handle.

A) at most $\frac{1226}{175}$ pounds B) at most 1051 pounds

C) at most 526 pounds D) at most 613 pounds

Answer: C

124) A certain store has a fax machine available for use by its customers. The store charges \$1.55 to send the first page and \$0.40 for each subsequent page. Use an inequality to find the maximum number of pages that can be faxed for \$5.55

A) at most 41 pages B) at most 14 pages C) at most 4 pages D) at most 10 pages

Answer: D

125) An archer has \$143 to spend on a new archery set. A certain set containing a bow and three arrows costs \$79. With the purchase of this set, he can purchase additional arrows for \$8 per arrow. Use an inequality to find the maximum number of arrows he could obtain, including those with the set, for his \$143.

A) at most $\frac{143}{8}$ arrows B) at most 11 arrows

C) at most $\frac{143}{79}$ arrows D) at most 8 arrows

Answer: B

126) When making a long distance call from a certain pay phone, the first three minutes of a call cost \$1.90. After that, each additional minute or portion of a minute of that call costs \$0.50. Use an inequality to find the maximum number of minutes one can call long distance for \$5.40.

A) at most 3 minutes B) at most 10 minutes C) at most 7 minutes D) at most 11 minutes

Answer: B

127) It takes 16 minutes to set up a candy making machine. Once the machine is set up, it produces 30 candies per minute. Use an inequality to find the number of candies that can be produced in 8 hours if the machine has not yet been set up.

A) at most 7200 candies
B) at most 13,920 candies
C) at most 3840 candies
D) at most 240 candies

Answer: B

128) 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.

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

Answer: C

List the elements of the set.

129) If A = {x | x is an even integer} and B = {25, 27, 29, 31}, list the elements of A ∪ B.

A) { }
B) {x | x is an even integer}
C) {x | x is an even integer or x = 25 or x = 27 or x = 29 or x = 31}
D) {25, 27, 29, 31}

Answer: C

130) If A = {x | x is an odd integer} and B = {45, 47, 48, 50}, list the elements of A ∪ B.

A) { }
B) {45, 47}
C) {x | x is an odd integer}
D) {x | x is an odd integer or x = 48 or x = 50}

Answer: D

131) If A = {21, 22, 23, 26} and B = {19, 21, 22, 24}, list the elements of A ∪ B.

A) {19, 21, 22, 23, 24, 26}
B) {21, 22}
C) {19, 23, 24, 26}
D) { }

Answer: A

132) If A = {x | x is an odd integer} and B = {x | x is an even integer}, list the elements of A ∪ B.

A) {0}
B) { }
C) {x | x is an even integer}
D) {x | x is an integer}

Answer: D

133) If A = {−5, −3, −2, −1, 2} and B = {−5, −3, −2, −1}, list the elements of A ∪ B.

A) {−5, −3, −2, −1}
B) {2}
C) { }
D) {−5, −3, −2, −1, 2}

Answer: D

134) If A = {x | x is an even integer} and B = {−5, −3, −1, 1}, list the elements of A ∩ B.

A) {x | x is an even integer or x = −5 or x = −3 or x = −1 or x = 1}
B) { }
C) {−5, −3, −1, 1}
D) {x | x is an even integer}

Answer: B

135) If A = {x | x is an odd integer} and B = {39, 41, 42, 44}, list the elements of A ∩ B.

A) {x | x is an odd integer or x = 42 or x = 44}
B) { }
C) {39, 41}
D) {x | x is an odd integer}

Answer: C

136) If A = {43, 44, 45, 48} and B = {41, 43, 44, 46}, list the elements of A ∩ B.

A) {41, 43, 44, 45, 46, 48}
B) {43, 44}
C) {41, 45, 46, 48}
D) { }

Answer: B

137) If A = {x | x is an odd integer} and B = {x | x is an even integer}, list the elements of A ∩ B.

A) {x | x is an integer}
B) {x | x is an even integer}
C) {0}
D) { }

Answer: D

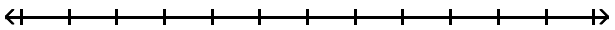
138) If A = {–11, –9, –8, –7, –4} and B = {–11, –9, –8, –7}, list the elements of A ∩ B.

A) { }
B) {–11, –9, –8, –7, –4}
C) {–4}
D) {–11, –9, –8, –7}

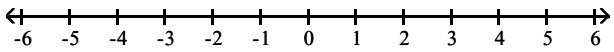
Answer: D

Solve the compound inequality. Graph the solution set.

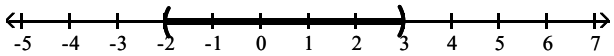
139) $x \leq 3$ and $x \geq -2$



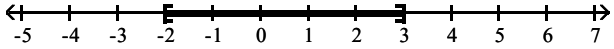
A) ∅



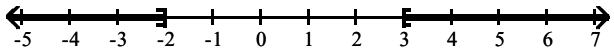
B) (–2, 3)



C) [–2, 3]

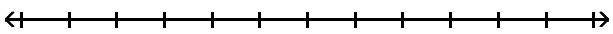


D) (–∞, –2] ∪ [3, ∞)

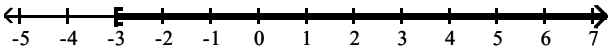


Answer: C

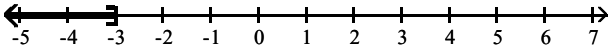
140) $x \leq -2$ and $x \leq -3$



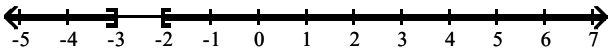
A) $[-3, \infty)$



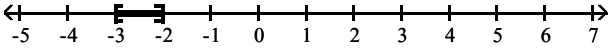
B) $(-\infty, -3]$



C) $(-\infty, -3] \cup [-2, \infty)$

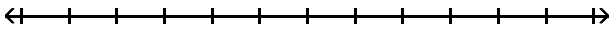


D) $[-3, -2]$

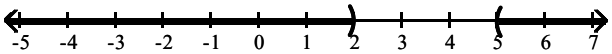


Answer: B

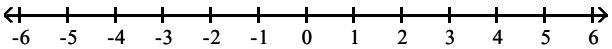
141) $6x < 30$ and $x + 6 > 8$



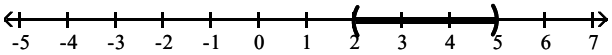
A) $(-\infty, 2) \cup (5, \infty)$



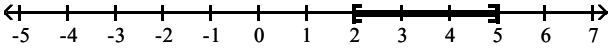
B) $\varnothing$



C) $(2, 5)$

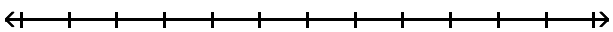


D) $[2, 5]$

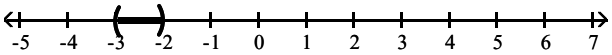


Answer: C

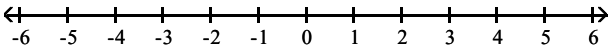
142) $-4x > 8$ and $x + 4 > 1$



A) $(-3, -2)$

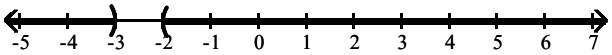


B) $\varnothing$



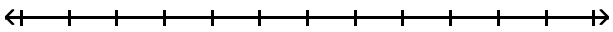
C) $(-2, \infty)$

D) $(-\infty, -3) \cup (-2, \infty)$

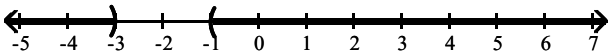


Answer: A

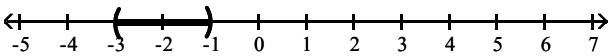
143) $x + 4 < 1$ and $-4x < 4$



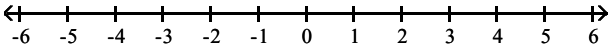
A) $(-\infty, -3) \cup (-1, \infty)$



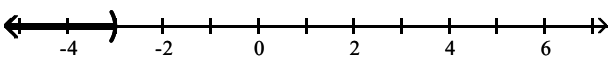
B) $(-3, -1)$



C) $\varnothing$

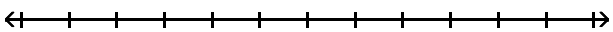


D) $(-\infty, -3)$

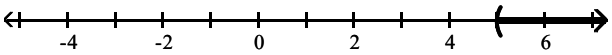


Answer: C

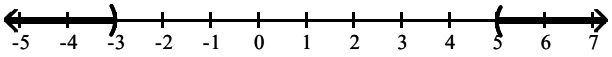
144) $-4x < -20$ and $x + 4 > 1$



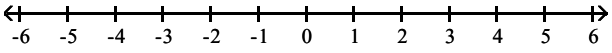
A) $(5, \infty)$



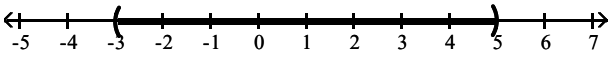
B) $(-\infty, -3) \cup (5, \infty)$



C) $\varnothing$

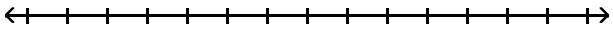


D) $(-3, 5)$

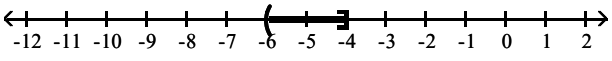


Answer: A

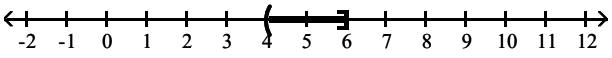
145) $8 < 2x \leq 12$



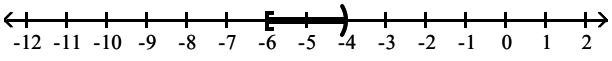
A) $(-6, -4]$



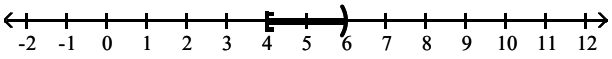
B) $(4, 6]$



C) $[-6, -4)$

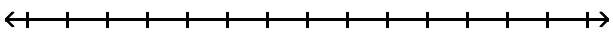


D) $[4, 6)$

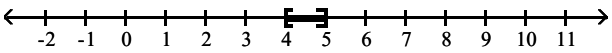


Answer: B

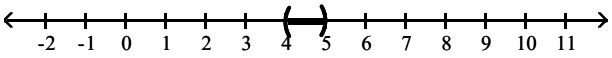
146) $17 \le 4t + 1 \le 21$



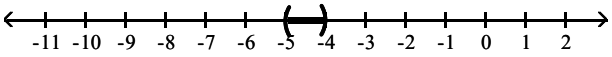
A) [4, 5]



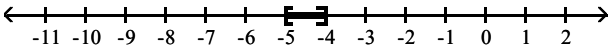
B) (4, 5)



C) (–5, –4)

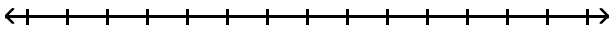


D) [–5, –4]

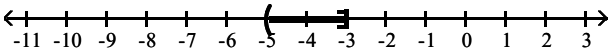


Answer: A

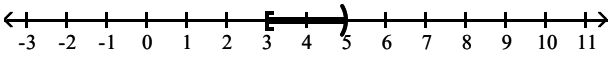
147) $-24 \le -4c - 4 < -16$



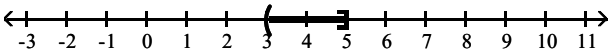
A) (–5, –3]



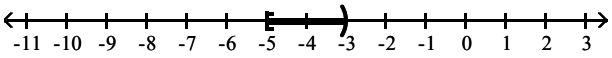
B) [3, 5)



C) (3, 5]

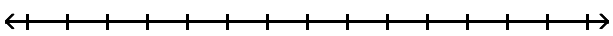


D) [–5, –3)

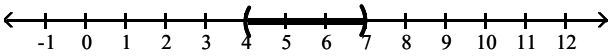


Answer: C

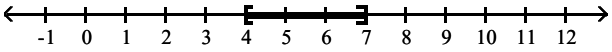
148) $-32 \leq -5z + 3 \leq -17$



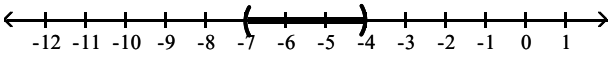
A) (4, 7)



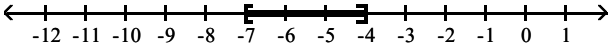
B) [4, 7]



C) (–7, –4)

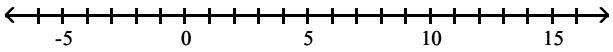


D) [–7, –4]

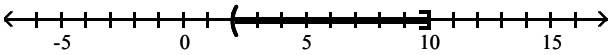


Answer: B

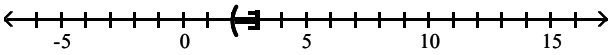
149) $11 \leq \frac{5}{2}x + 6 < 31$



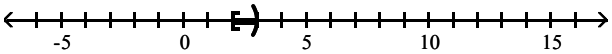
A) (2, 10]



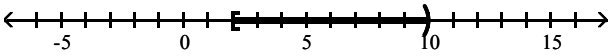
B) (2, 3]



C) [2, 3)

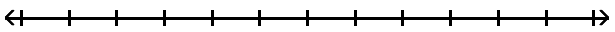


D) [2, 10)

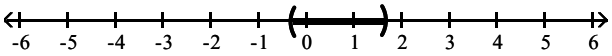


Answer: D

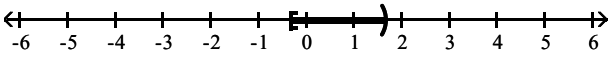
150) $0 \le \frac{3x+1}{2} < 3$



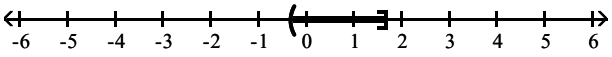
A) $\left(-\frac{1}{3}, \frac{5}{3}\right)$



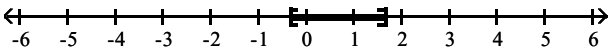
B) $\left[-\frac{1}{3}, \frac{5}{3}\right)$



C) $\left(-\frac{1}{3}, \frac{5}{3}\right]$

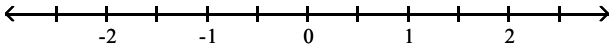


D) $\left[-\frac{1}{3}, \frac{5}{3}\right]$

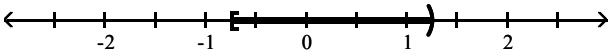


Answer: B

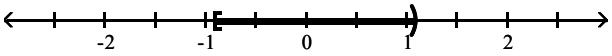
151) $-\frac{1}{3} \le \frac{4x-1}{12} < \frac{1}{3}$



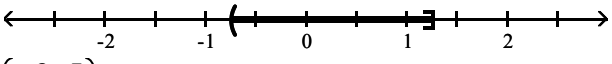
A) $\left[-\frac{3}{4}, \frac{5}{4}\right)$



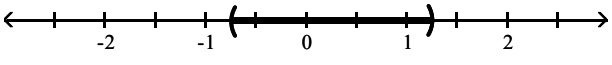
B) $\left[-\frac{11}{12}, \frac{13}{12}\right)$



C) $\left(-\frac{3}{4}, \frac{5}{4}\right]$

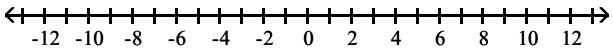


D) $\left(-\frac{3}{4}, \frac{5}{4}\right)$

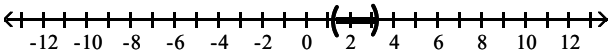


Answer: A

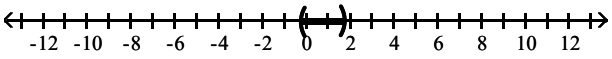
152) $0.5 < 0.4x - 0.6 < 1.3$



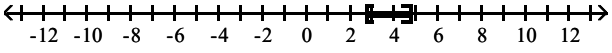
A) (2.75, 4.75)



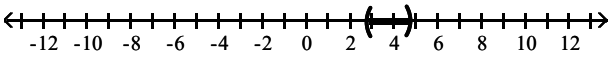
B) (–0.25, 1.75)



C) [2.75, 4.75]

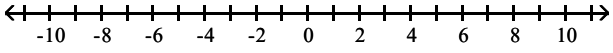


D) (2.75, 4.75)

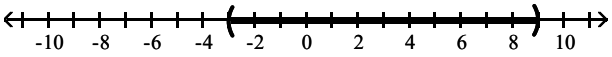


Answer: D

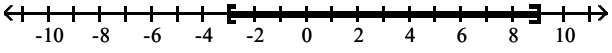
153) $5x + 2 < 6x + 5 < 7x - 4$



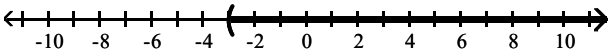
A) (–3, 9)



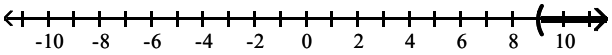
B) (–3, 9)



C) (–3, ∞)

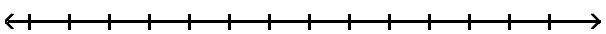


D) (9, ∞)

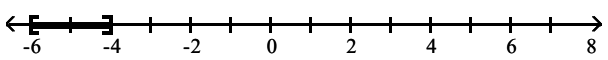


Answer: D

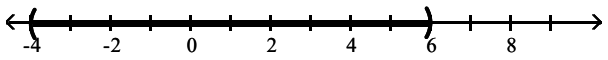
154) $x \leq 4$ or $x \geq 6$



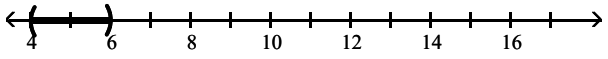
A) [−6, −4]



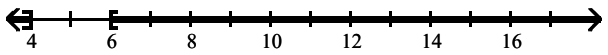
B) (−4, 6)



C) (4, 6)

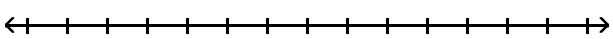


D) (−∞, 4] ∪ [6, ∞)

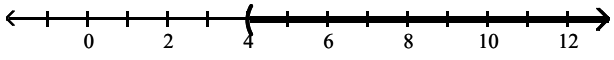


Answer: D

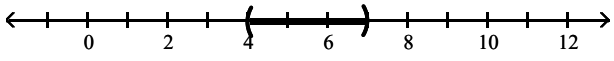
155) $x < 4$ or $x < 7$



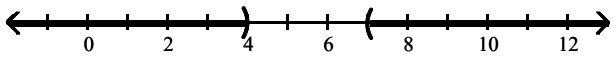
A) (4, ∞)



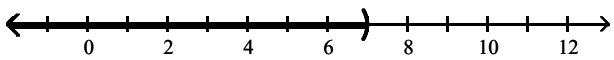
B) (4, 7)



C) (−∞, 4) ∪ (7, ∞)

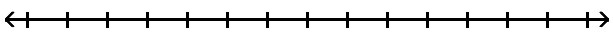


D) (−∞, 7)

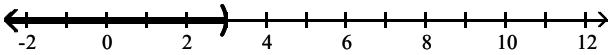


Answer: D

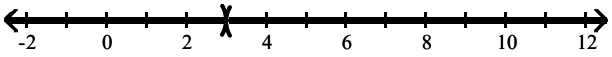
156) $x > 3$ or $x < 3$



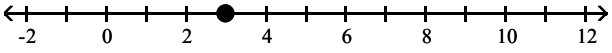
A) $(-\infty, 3)$



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



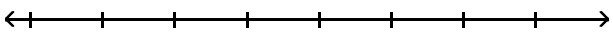
C) $\{3\}$



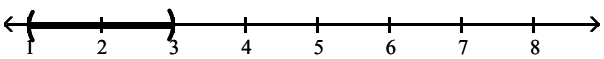
D) $(3, \infty)$

Answer: B

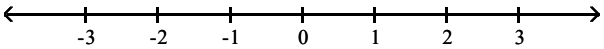
157) $6x - 4 < 2x$ or $-2x \leq -6$



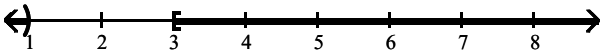
A) $(1, 3)$



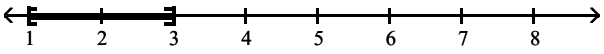
B) $\varnothing$



C) $(-\infty, 1) \cup [3, \infty)$

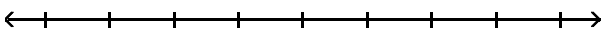


D) $[1, 3]$

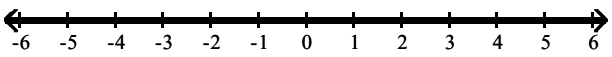


Answer: C

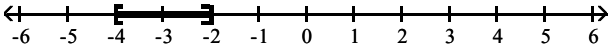
158) $-5x + 1 \geq 11$ or $3x + 3 \geq -9$



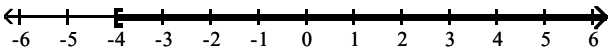
A) $(-\infty, \infty)$



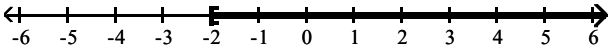
B) $[-4, -2]$



C) $[-4, \infty)$



D) $[-2, \infty)$



Answer: A

Solve.

159) The formula for converting Fahrenheit temperatures to Celsius temperatures is $C = \frac{5}{9}(F - 32)$. Use this formula to solve the problem. In a certain city, the average temperature ranges from –20° to 32° Celsius. Use a compound inequality to convert these temperatures to Fahrenheit temperatures. If necessary, round to the nearest tenth of a degree.

A) $-4° \leq F \leq 89.6°$ B) $20.9° \leq F \leq 49.8°$ C) $-36° \leq F \leq 57.6°$ D) $-68° \leq F \leq 25.6°$

Answer: A

160) Cindy has scores of 75, 84, 84, and 89 on her biology tests. Use a compound inequality to find the range of scores she can make on her final exam to receive a C in the course. The final exam counts as two tests, and a C is received if the final course average is from 70 to 79.

A) $88 \leq$ final score ≤ 142 B) $44 \leq$ final score ≤ 71

C) $70 \leq$ final score ≤ 79 D) $9 \leq$ final score ≤ 31.5

Answer: B

Solve the absolute value equation.

161) $|x| = 10$

A) –10 B) 10, –10 C) 10 D) 100

Answer: B

162) $|15x| = 16.5$

A) 1.1, –1.1 B) 0, 1.1, –1.1 C) –1.1 D) 1.1

Answer: A

163) $|x + 3| = 6$

A) 9, 3 B) ∅ C) –3 D) –9, 3

Answer: D

164) $|x| + 6 = 9$

A) 3 B) –3 C) –3, 3 D) 15

Answer: C

165) $|6x + 7| = 9$

A) $\frac{1}{3}, -\frac{8}{3}$ B) ∅ C) $\frac{2}{7}, -\frac{16}{7}$ D) $-\frac{1}{3}, \frac{8}{3}$

Answer: A

166) $\left|\frac{9x + 36}{4}\right| = 9$

A) –8, 0 B) –8, 8 C) ∅ D) 8, 0

Answer: A

167) $|4x| + 4 = 9$

A) ∅ B) 5, –5 C) $\frac{5}{4}, -\frac{5}{4}$ D) $\frac{4}{5}, -\frac{4}{5}$

Answer: C

168) $|10x| = 0$

A) 10, –10 B) $\frac{1}{10}$ C) 10 D) 0

Answer: D

169) $|3x + 2| + 8 = 12$

A) 1, – 3 B) $-\frac{2}{3}, 2$ C) ∅ D) $\frac{2}{3}, -2$

Answer: D

170) $|6x + 8| + 6 = 4$

A) $-\frac{3}{4}, -\frac{5}{4}$ B) $-1, -\frac{5}{3}$ C) ∅ D) $1, \frac{5}{3}$

Answer: C

171) $|2x - 5| = 0$

A) $\frac{5}{2}$ B) ∅ C) $\frac{5}{2}, -\frac{5}{2}$ D) $-\frac{5}{2}$

Answer: A

172) $|5x - 7| = |x - 4|$

A) ∅ B) $-\frac{3}{4}, -\frac{11}{6}$ C) $\frac{3}{4}, \frac{11}{6}$ D) $\frac{3}{4}, -\frac{5}{3}$

Answer: C

173) $|x - 6| = |9 - x|$

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

Answer: A

174) $|7x + 2| = |-8 + 8x|$

A) 10 B) ∅ C) $10, -\frac{2}{5}$ D) $10, \frac{2}{5}$

Answer: D

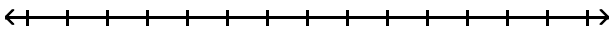
175) $\left|\frac{7x - 5}{6}\right| = |-3|$

A) ∅ B) $-\frac{23}{7}$ C) $\frac{23}{7}, -\frac{13}{7}$ D) $\frac{13}{7}$

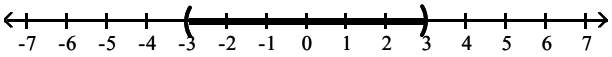
Answer: C

Solve the inequality. Graph the solution set.

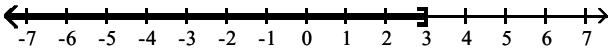
176) $|x| \leq 3$



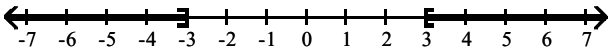
A) $(-3, 3)$



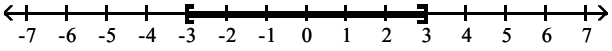
B) $(-\infty, 3]$



C) $(-\infty, -3] \cup [3, \infty)$

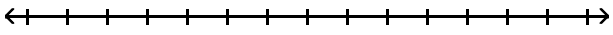


D) $[-3, 3]$

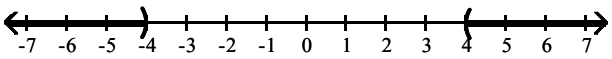


Answer: D

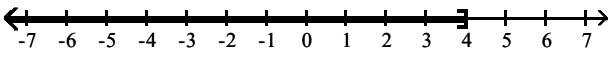
177) $|x| < 4$



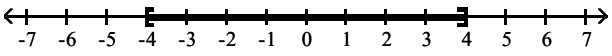
A) $(-\infty, -4) \cup (4, \infty)$



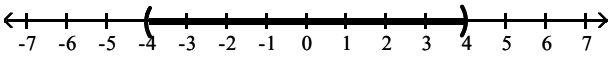
B) $(-\infty, 4]$



C) $[-4, 4]$



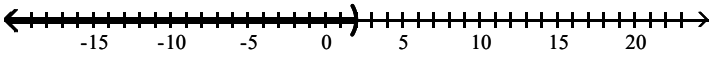
D) $(-4, 4)$



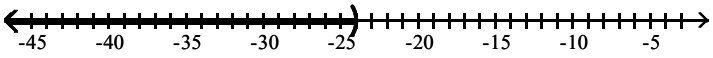
Answer: D

178) $|x + 11| < 13$

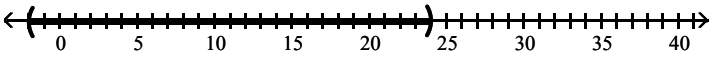
A) $(-\infty, 2)$



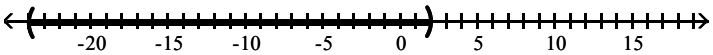
B) $(-\infty, -24)$



C) $(-2, 24)$

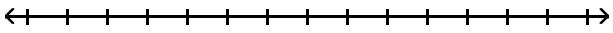


D) $(-24, 2)$

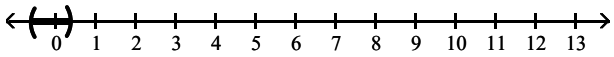


Answer: D

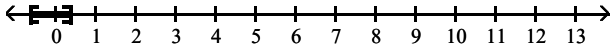
179) $|8k + 1| \leq 4$



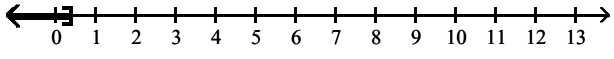
A) $\left(-\frac{5}{8}, \frac{3}{8}\right)$



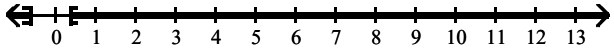
B) $\left[-\frac{5}{8}, \frac{3}{8}\right]$



C) $\left(-\infty, \frac{3}{8}\right]$

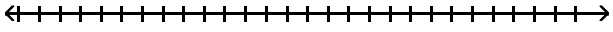


D) $\left(-\infty, -\frac{5}{8}\right] \cup \left[\frac{3}{8}, \infty\right)$

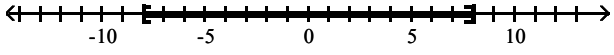


Answer: B

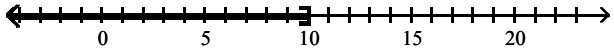
180) $|x| + 1 \leq 9$



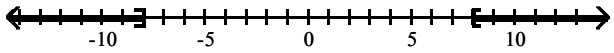
A) [–8, 8]



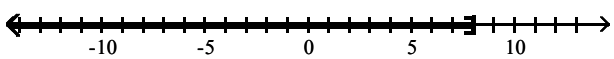
B) (–∞, 10]



C) (–∞, –8] ∪ [8, ∞)

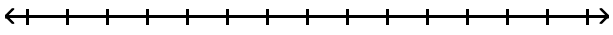


D) (–∞, 8]

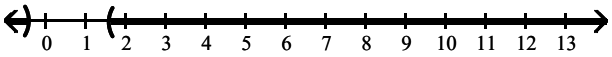


Answer: A

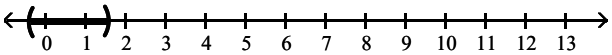
181) $|7k - 4| < -7$



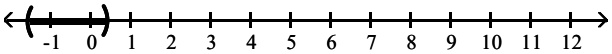
A) $\left(-\infty, -\frac{3}{7}\right) \cup \left(\frac{11}{7}, \infty\right)$



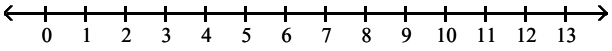
B) $\left(-\frac{3}{7}, \frac{11}{7}\right)$



C) $\left(-\frac{11}{7}, \frac{3}{7}\right)$

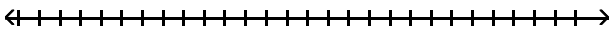


D) ∅

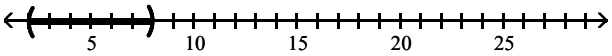


Answer: D

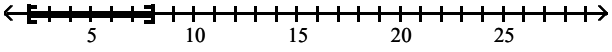
182) $|x - 5| + 1 \leq 4$



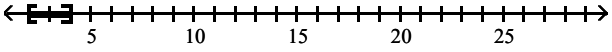
A) (2, 8)



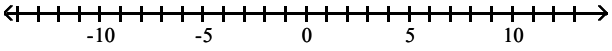
B) [2, 8]



C) [2, 4]

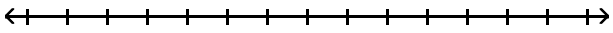


D) ∅

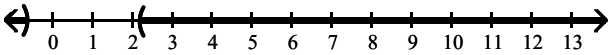


Answer: B

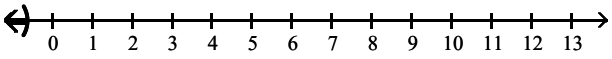
183) $|5k - 4| - 3 < 4$



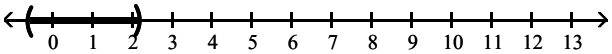
A) $\left(-\infty, -\frac{3}{5}\right) \cup \left(\frac{11}{5}, \infty\right)$



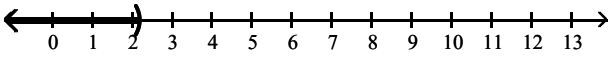
B) $\left(-\infty, -\frac{3}{5}\right)$



C) $\left(-\frac{3}{5}, \frac{11}{5}\right)$

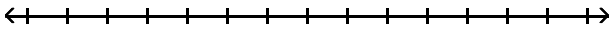


D) $\left(-\infty, \frac{11}{5}\right)$

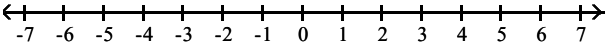


Answer: C

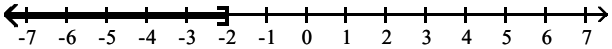
184) $|x| < -2$



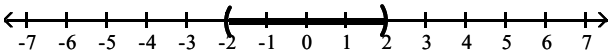
A) ∅



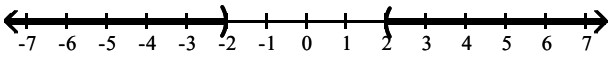
B) $(-\infty, -2]$



C) $(-2, 2)$

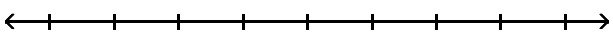


D) $(-\infty, -2) \cup (2, \infty)$

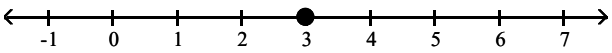


Answer: A

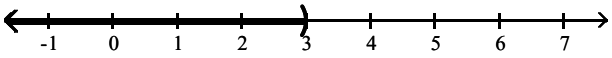
185) $|x - 3| \leq 0$



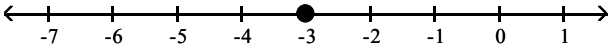
A) 3



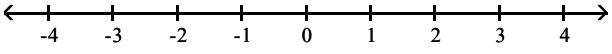
B) $(-\infty, 3)$



C) -3

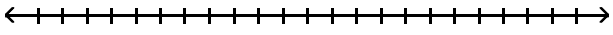


D) $\varnothing$

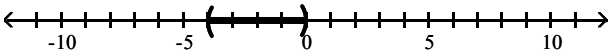


Answer: A

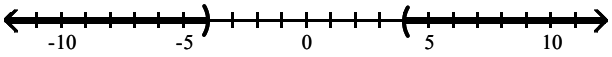
186) $\left|\frac{11y + 22}{2}\right| < 11$



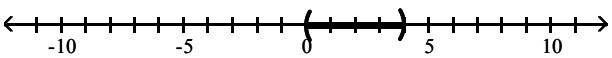
A) $(-4, 0)$



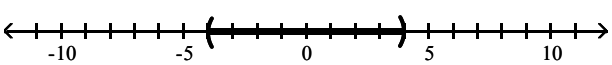
B) $(-\infty, -4) \cup (0, \infty)$



C) $(0, 4)$

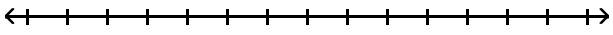


D) $(-4, 4)$

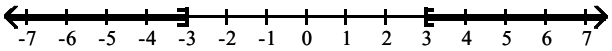


Answer: A

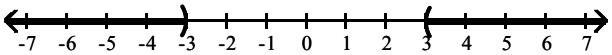
187) $|x| \geq 3$



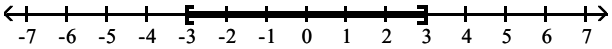
A) $(-\infty, -3] \cup [3, \infty)$



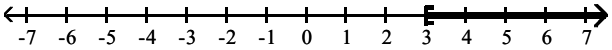
B) $(-\infty, -3) \cup (3, \infty)$



C) $[-3, 3]$

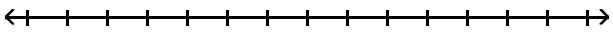


D) $[3, \infty)$

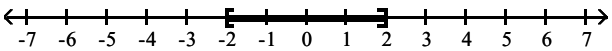


Answer: A

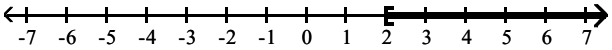
188) $|x| > 2$



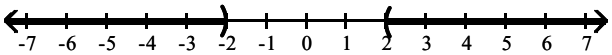
A) $[-2, 2]$



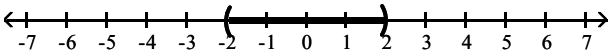
B) $[2, \infty)$



C) $(-\infty, -2) \cup (2, \infty)$



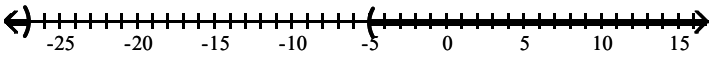
D) $(-2, 2)$



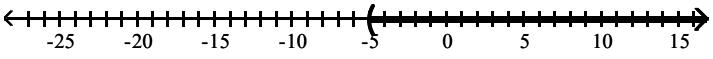
Answer: C

189) $|x + 16| > 11$

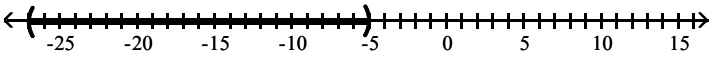
A) $(-\infty, -27) \cup (-5, \infty)$



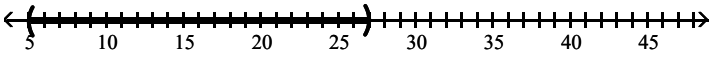
B) $(-5, \infty)$



C) $(-27, -5)$

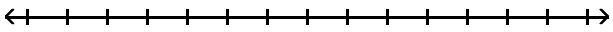


D) $(5, 27)$

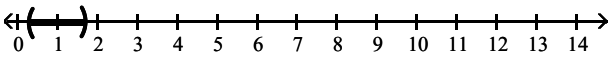


Answer: A

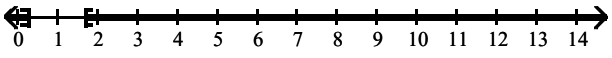
190) $|7k - 7| \geq 5$



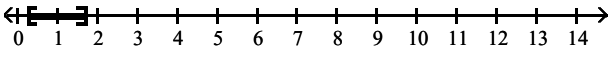
A) $\left(\frac{2}{7}, \frac{12}{7}\right)$



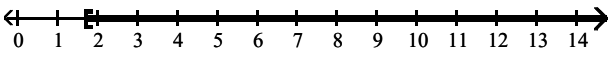
B) $\left(-\infty, \frac{2}{7}\right] \cup \left[\frac{12}{7}, \infty\right)$



C) $\left[\frac{2}{7}, \frac{12}{7}\right]$

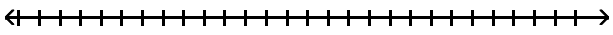


D) $\left[\frac{12}{7}, \infty\right)$

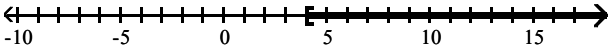


Answer: B

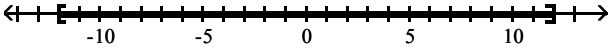
191) $|x| - 4 \geq 8$



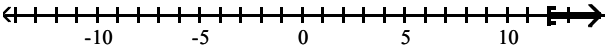
A) $[4, \infty)$



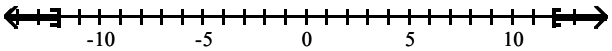
B) $[-12, 12]$



C) $[12, \infty)$

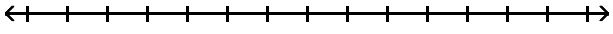


D) $(-\infty, -12] \cup [12, \infty)$

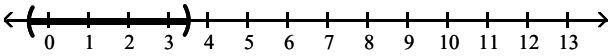


Answer: D

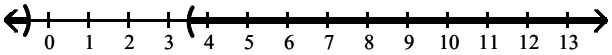
192) $|2k - 3| > -4$



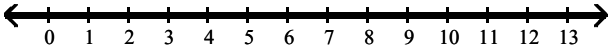
A) $\left(-\frac{1}{2}, \frac{7}{2}\right)$



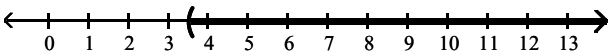
B) $\left(-\infty, -\frac{1}{2}\right] \cup \left(\frac{7}{2}, \infty\right)$



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

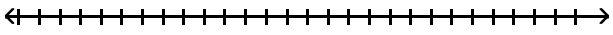


D) $\left(\frac{7}{2}, \infty\right)$

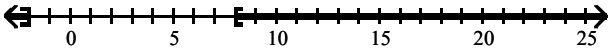


Answer: C

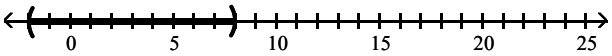
193) $|x - 3| + 6 \geq 11$



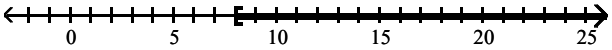
A) $(-\infty, -2] \cup [8, \infty)$



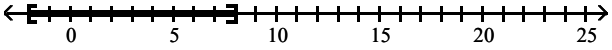
B) $(-2, 8)$



C) $[8, \infty)$

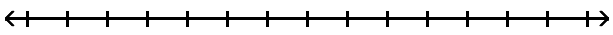


D) $[-2, 8]$

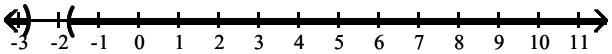


Answer: A

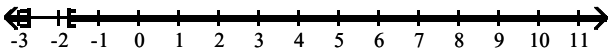
194) $|4k + 9| - 5 > -3$



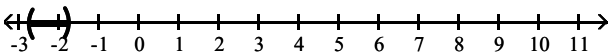
A) $\left(-\infty, -\frac{11}{4}\right) \cup \left(-\frac{7}{4}, \infty\right)$



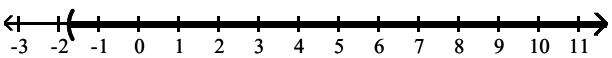
B) $\left(-\infty, -\frac{11}{4}\right] \cup \left[-\frac{7}{4}, \infty\right)$



C) $\left(-\frac{11}{4}, -\frac{7}{4}\right)$

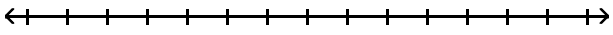


D) $\left(-\frac{7}{4}, \infty\right)$

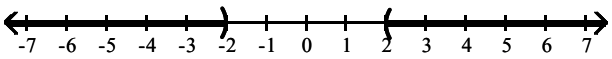


Answer: A

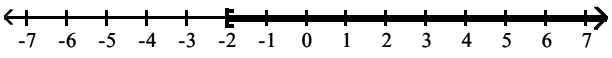
195) $|x| > -2$



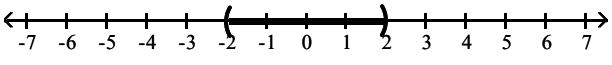
A) $(-\infty, -2) \cup (2, \infty)$



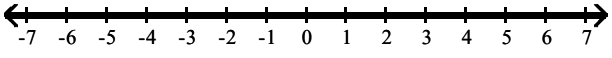
B) $[-2, \infty)$



C) $(-2, 2)$

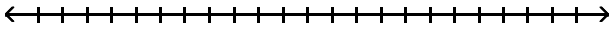


D) $(-\infty, \infty)$

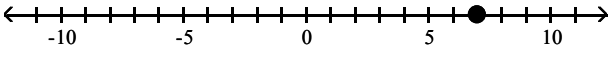


Answer: D

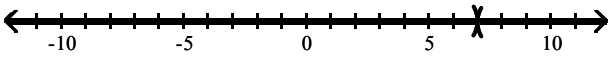
196) $|x - 7| \geq 0$



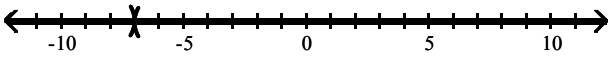
A) 7



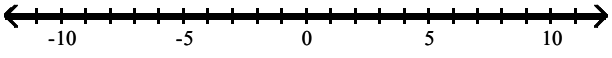
B) $(-\infty, 7) \cup (7, \infty)$



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

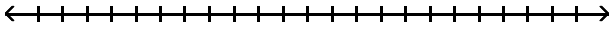


D) $(-\infty, \infty)$

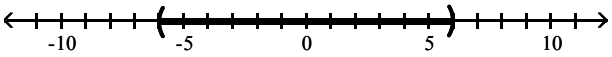


Answer: D

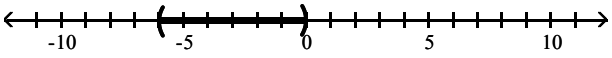
197) $\left|\frac{10y + 30}{3}\right| > 10$



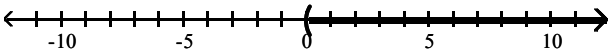
A) (–6, 6)



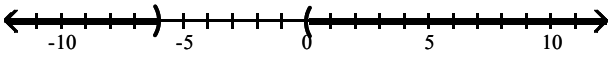
B) (–6, 0)



C) (0, ∞)

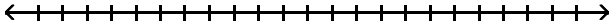


D) (–∞, –6) ∪ (0, ∞)

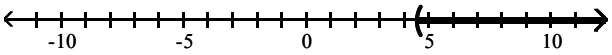


Answer: D

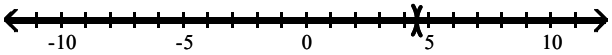
198) $|2x - 9| > 0$



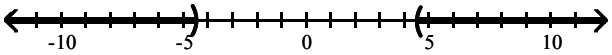
A) $\left(\frac{9}{2}, \infty\right)$



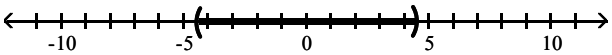
B) $\left(-\infty, \frac{9}{2}\right) \cup \left(\frac{9}{2}, \infty\right)$



C) $\left(-\infty, -\frac{9}{2}\right] \cup \left[\frac{9}{2}, \infty\right)$



D) $\left(-\frac{9}{2}, \frac{9}{2}\right)$



Answer: B

Solve the absolute value equation.

199) $|4x + 6| = 7$

A) $\varnothing$ B) $\frac{1}{4}, -\frac{13}{4}$ C) $\frac{1}{6}, -\frac{13}{6}$ D) $-\frac{1}{4}, \frac{13}{4}$

Answer: B

200) $|8x + 4| + 8 = 17$

A) $-\frac{5}{8}, \frac{13}{8}$ B) $\varnothing$ C) $\frac{5}{8}, -\frac{13}{8}$ D) $\frac{5}{4}, -\frac{13}{4}$

Answer: C

201) $|5x - 6| = -5$

A) $\varnothing$ B) $\frac{1}{5}, \frac{11}{5}$ C) $-\frac{1}{5}, -\frac{11}{5}$ D) $-\frac{1}{6}, -\frac{11}{6}$

Answer: A

202) $\left|\frac{7x - 2}{3}\right| = 4$

A) $\varnothing$ B) $\frac{10}{7}$ C) $2, -\frac{10}{7}$ D) -2

Answer: C

Write the inequality.

203) Write an absolute value inequality representing all numbers x whose distance from 0 is less than 15 units.

A) $|x| < 15$ B) $|x| > 15$ C) $|x| \leq 14$ D) $|x| \leq 15$

Answer: A

204) Write an absolute value inequality representing all numbers x whose distance from 0 is greater than 8 units.

A) $|x| \geq 9$ B) $|x| > 8$ C) $|x| < 8$ D) $|x| \geq 8$

Answer: B

205) Write $-13 \leq x \leq 13$ as an inequality containing absolute value.

A) $|x| \geq 13$ B) $|x| \leq 13$ C) $|x| \leq 12$ D) $|x| \geq 12$

Answer: B

206) Write $x > 15$ or $x < -15$ as an inequality containing absolute value.

A) $|x| > 16$ B) $|x| > 15$ C) $|x| \geq 16$ D) $|x| < 15$

Answer: B

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

contradiction	**linear inequality in one variable**	**compound inequality**	**solution**
absolute value	**consecutive integers**	**identity**	**union**
formula	**linear equation in one variable**	**intersection**	

207) The statement "$x < 5$ or $x > 7$" is called a(n) _____.

A) intersection B) contradiction

C) absolute value D) compound inequality

Answer: D

208) An equation in one variable that has no solution is called a(n)_____.

A) identity B) intersection C) union D) contradiction

Answer: D

209) The _____ of two sets is the set of all elements common to both sets.

A) solution B) union C) intersection D) absolute value

Answer: C

210) The _____ of two sets in the set of all elements that belong to either of the sets.

A) intersection B) absolute value C) union D) solution

Answer: C

211) An equation in one variable that has every number (for which the equation is defined) as a solution is called a(n)_____.

A) intersection B) contradiction C) union D) identity

Answer: D

212) The equation d = rt is also called a(n)_____.

A) identity B) linear equation in one variable

C) linear inequality in one variable D) formula

Answer: D

213) A number's distance from 0 is called its_____.

A) intersection B) solution C) formula D) absolute value

Answer: D

214) When a variable in an equation is replaced by a number and the resulting equation is true, then the number is called a(n) _____ of the equation.

A) identity B) solution C) formula D) absolute value

Answer: B

215) The integers 17, 18, 19 are examples of _____.

A) contradiction B) intersection

C) consecutive integers D) absolute value

Answer: C

216) The statement $5x - 0.2 < 7$ is an example of a(n)_____.

A) linear inequality in one variable B) compound inequality

C) linear equation in one variable D) formula

Answer: A

217) The statement $5x - 0.2 = 7$ is an example of a(n)_____.

A) linear inequality in one variable B) compound inequality

C) formula D) linear equation in one variable

Answer: D

Solve the equation.

218) $12x - 24 = 4x - 32$

A) -4 B) 1 C) -1 D) 4

Answer: C

219) $3(x + 3) = 2[11 - 2(3 - x) + 7]$

A) 15 B) -15 C) -8 D) 3

Answer: B

220) $9(y + 2) + y = 2(4 + 5y)$

A) $\frac{1}{2}$ B) all real numbers C) $\varnothing$ D) $-\frac{1}{2}$

Answer: C

221) $7n + 6 + n = 2(4n + 3)$

A) $-\frac{3}{4}$ B) $\varnothing$ C) all real numbers D) $\frac{3}{4}$

Answer: C

222) $\frac{3w}{4} + 6 = \frac{7w}{10} + 4$

A) 20 B) $-\frac{1}{4}$ C) -40 D) 40

Answer: C

223) $\frac{z + 1}{9} + 1 = \frac{2z + 3}{6}$

A) $\frac{11}{3}$ B) $-\frac{3}{2}$ C) $\frac{29}{4}$ D) $\frac{11}{4}$

Answer: D

224) $|7x + 4| + 5 = 7$

A) $\frac{2}{7}, \frac{6}{7}$ B) $-\frac{2}{7}, -\frac{6}{7}$ C) $-\frac{1}{2}, -\frac{3}{2}$ D) $\varnothing$

Answer: B

225) $|3t + 7| = -8$

A) $\frac{1}{3}, -5$ B) $-\frac{1}{3}, 5$ C) $\varnothing$ D) $\frac{1}{7}, -\frac{15}{7}$

Answer: C

226) $|-9x + 1| = |2 - 2x|$

A) $-\frac{1}{7}$ B) $\varnothing$ C) $-\frac{1}{7}, -\frac{3}{11}$ D) $-\frac{1}{7}, \frac{3}{11}$

Answer: D

227) $|x + 8| = |7 - x|$

A) $\varnothing$ B) $-\frac{1}{2}$ C) 2 D) –1

Answer: B

Solve the equation for the specified variable.

228) $7x - 6y = 1$ for y

A) $y = \frac{7x - 1}{6}$ B) $y = 7x - 1$ C) $y = \frac{7x + 1}{6}$ D) $y = \frac{1 - 7x}{6}$

Answer: A

229) $F = ab^2 + acb$ for a

A) $a = \frac{F}{b^3c}$ B) $a = \frac{F}{b^2 + cb}$ C) $a = \frac{b^2 + cb}{F}$ D) $a = F - a - cb$

Answer: B

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

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

Answer: C

Solve the inequality. Write your solution in interval notation.

231) $3(2x - 8) - 4x > -(x + 27)$

A) $(-\infty, -4)$ B) $(17, \infty)$ C) $(-3, \infty)$ D) $(-1, \infty)$

Answer: D

232) $\frac{3x - 1}{3} - \frac{5x + 7}{4} \geq 0$

A) $\left[\frac{25}{3}, \infty\right)$ B) $\left(-\infty, -\frac{25}{3}\right]$ C) $\left(-\infty, -\frac{8}{3}\right]$ D) $\left[-\frac{25}{3}\ \infty\right)$

Answer: B

233) $-6 < 2(x - 2) \leq 2$

A) $(-5, -1]$ B) $(-\infty, -1) \cup [-1, \infty)$ C) $\left(-\frac{3}{2}, 2\right]$ D) $(-1, 3]$

Answer: D

234) $|7x + 6| \geq 9$

A) $\left[-\frac{15}{7}, \frac{3}{7}\right]$ B) $\left(-\infty, -\frac{15}{7}\right] \cup \left[\frac{3}{7}, \infty\right)$ C) $\left[\frac{3}{7}, \infty\right)$ D) $\left(-\frac{15}{7}, \frac{3}{7}\right)$

Answer: B

235) $|x + 3| + 7 < 10$

A) [–6, 0] B) (–6, 0) C) $\varnothing$ D) (–6, 10)

Answer: B

236) $x \geq 5$ and $x \geq 1$

A) $\varnothing$ B) $[1, \infty)$ C) $[1, 5]$ D) $[5, \infty)$

Answer: D

237) $x \geq -1$ or $x \geq -3$

A) $(-\infty, \infty)$ B) $[-1, \infty)$ C) $[-3, \infty)$ D) $(-\infty, -3] \cup [-1, \infty)$

Answer: C

238) $-1 \leq \frac{2x - 2}{4} < 6$

A) $[-1, 13)$ B) $[0, 14)$ C) $(-\infty, -1] \cup [14, \infty)$ D) $[-3, 11)$

Answer: A

239) $3x + 4 > 2x + 7$ or $1 - x > -5$

A) $\varnothing$ B) $(3, 6)$ C) $(-\infty, \infty)$ D) $(-\infty, 3) \cup (6, \infty)$

Answer: C

Solve.

240) Find 14% of 90.

A) 126 B) 76 C) 112 D) 12.6

Answer: D

241) A computer company sold 7,360,000 computers this year. This represents a 9.21% decrease over the number of new computers sold 3 years ago. Use this information to find the number of new computers sold 3 years ago. Round to the nearest thousand.

A) 9,110,000 computers B) 79,913,000 computers

C) 8,107,000 computers D) 67,786,000 computers

Answer: C

242) A circular pen has circumference of 75.2 feet. Approximate π by 3.14 and estimate how many sheep could be safely kept in the pen if each sheep needs at least 60 square feet.

A) 10 sheep B) 30 sheep C) 7 sheep D) 15 sheep

Answer: C

243) The price of a lake front lot in a certain housing development is \$118,000. This represents 112% increase over the price when the development was first created a decade ago. Find the price of the lot when the development was first created.

A) \$55,660 B) \$105,357 C) \$106,800 D) \$134,091

Answer: A

244) Find the amount of money in an account after 11 years if a principal of \$2000 is invested at 3.7% interest compounded quarterly.

A) \$3002.73 B) \$2998.99 C) \$4903.92 D) \$2982.61

Answer: B

245) $43 billion a year is spent on tourism in Florida, Louisiana, and Mississippi. Tourists spend $4 billion more in Louisiana than they do in Mississippi. In Florida they spend $1 billion less than twice the amount spent in Mississippi. Find the amount spent in each state.

A) Mississippi: $12 billion; Louisiana: $16 billion; Florida: $15 billion
B) Mississippi: $12 billion; Louisiana: $16 billion; Florida: $23 billion
C) Mississippi: $10 billion; Louisiana: $14 billion; Florida: $19 billion
D) Mississippi: $9 billion; Louisiana: $13 billion; Florida: $17 billion

Answer: C