

Name \_\_\_\_\_

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

Solve.

- 1) A rectangular Persian carpet has a perimeter of 224 inches. The length of the carpet is 20 inches more than the width. What are the dimensions of the carpet? 1) \_\_\_\_\_
- A) 92 in., 112 in.      B) 102 in., 122 in.      C) 66 in., 86 in.      D) 46 in., 66 in.

Answer: D

Diff: 0    Type: BI

Solve using the addition principle.

- 2)  $-15 + z = -84$  2) \_\_\_\_\_
- A) -99      B) 69      C) -69      D) 99

Answer: C

Diff: 0    Type: BI

Solve using the addition and multiplication principles together.

- 3)  $-[7x + (9x + 4)] = 5 - (2x + 7)$  3) \_\_\_\_\_
- A)  $\frac{1}{2}$       B)  $-\frac{1}{7}$       C)  $-\frac{4}{7}$       D) 2

Answer: B

Diff: 0    Type: BI

Solve for the given letter.

- 4)  $\frac{PV}{T} = \frac{pv}{t}$  for P 4) \_\_\_\_\_
- A)  $P = \frac{pvT}{tV}$       B)  $P = \frac{pvV}{tT}$       C)  $P = \frac{tvT}{pV}$       D)  $P = \frac{pv}{tTV}$

Answer: A

Diff: 0    Type: BI

Solve using the addition and multiplication principles together.

- 5)  $-52 = -10x - 2$  5) \_\_\_\_\_
- A) -40      B) -36      C) 7      D) 5

Answer: D

Diff: 0    Type: BI

Solve for the given letter.

- 6)  $a + b = s + r$  for s 6) \_\_\_\_\_
- A)  $s = \frac{a+b}{r}$       B)  $s = r(a+b)$       C)  $s = \frac{a}{r} + b$       D)  $s = a + b - r$

Answer: D

Diff: 0    Type: BI

Solve the problem.

- 7) The circumference of a circle is given by  $C = 2\pi r$ , where  $r$  is the radius. Find the circumference if  $\pi = 3.14$  and  $r = 9$  feet. 7) \_\_\_\_\_
- A) 56.52 feet      B) 354.95 feet      C) 18 feet      D) 59.66 feet

Answer: A

Diff: 0    Type: BI

Solve for the given letter.

- 8)  $\frac{1}{a} + \frac{1}{b} = c$  for  $b$  8) \_\_\_\_\_
- A)  $b = \frac{1}{c} - a$       B)  $b = \frac{a}{ac - 1}$       C)  $b = ac - \frac{1}{a}$       D)  $b = \frac{1}{ac}$

Answer: B

Diff: 0    Type: BI

Solve.

- 9) Jan swims at a speed of 3.3 mph in still water. The river she's in flows at a speed of 3.1 mph. How long will it take Jan to swim 2 mi downstream? Round your answer to the nearest tenth of an hour, if necessary. 9) \_\_\_\_\_
- A) 10 hr      B) 3.2 hr      C) 0.3 hr      D) 12.8 hr

Answer: C

Diff: 0    Type: BI

- 10)  $1.9x - 3 \geq 1.4x + 12.5$  10) \_\_\_\_\_
- A)  $(-\infty, 31]$       B)  $(3.1, \infty)$       C)  $[31, \infty)$       D)  $(-\infty, 31]$

Answer: C

Diff: 0    Type: BI

Solve for the given letter.

- 11)  $A = \frac{1}{2}bh$  for  $h$  11) \_\_\_\_\_
- A)  $h = \frac{b}{2A}$       B)  $h = \frac{A}{2b}$       C)  $h = \frac{Ab}{2}$       D)  $h = \frac{2A}{b}$

Answer: D

Diff: 0    Type: BI

Solve the problem.

- 12) The perimeter of a rectangle,  $P$ , is given by  $P = 2L + 2W$ , where  $L$  is its length and  $W$  is its width. What is the perimeter of a rectangle of length 45 ft and width 15 ft? 12) \_\_\_\_\_
- A) 120 ft      B) 60 ft      C) 105 ft      D) 240 ft

Answer: A

Diff: 0    Type: BI

Solve using the addition and multiplication principles together.

- 13)  $2r + 4 = 18$  13) \_\_\_\_\_
- A) 7      B) 5      C) 12      D) 16

Answer: A

Diff: 0    Type: BI

Solve.

- 14) Suppose the sales of a particular brand of appliance satisfy the relationship  $S = 240x + 700$ , where  $S$  represents the number of appliances sold in year  $x$ , with  $x = 0$  corresponding to 1982. Find the number of appliances sold in 1993. 14) \_\_\_\_\_
- A) 3340 appliances      B) 6440 appliances      C) 3100 appliances      D) 6680 appliances

Answer: A

Diff: 0    Type: BI

Solve using the multiplication principle.

- 15)  $-60 = -5n$  15) \_\_\_\_\_
- A) 12      B) -12      C) 55      D) -55

Answer: A

Diff: 0    Type: BI

Write interval notation.

- 16)  $\{x | -6 \leq x < -2\}$  16) \_\_\_\_\_
- A)  $(-6, -2]$       B)  $[-6, -2)$       C)  $[-6, -2]$       D)  $(-6, -2)$

Answer: B

Diff: 0    Type: BI

Solve.

- 17) The sum of two consecutive integers is -375. Find the larger integer. 17) \_\_\_\_\_
- A) -189      B) -186      C) -187      D) -188

Answer: C

Diff: 0    Type: BI

Write interval notation.

- 18)  $\{x | x > 5\}$  18) \_\_\_\_\_
- A)  $(-\infty, 5)$       B)  $[5, \infty)$       C)  $(5, \infty)$       D)  $(-\infty, 5]$

Answer: C

Diff: 0    Type: BI

Solve for the given letter.

- 19)  $I = prt$  for  $r$  19) \_\_\_\_\_
- A)  $r = \frac{P - 1}{It}$       B)  $r = P - tI$       C)  $r = \frac{I}{Pt}$       D)  $r = \frac{P - I}{1 + t}$

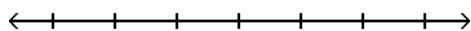
Answer: C

Diff: 0    Type: BI

Solve and graph. Write the result in interval notation.

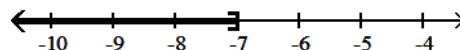
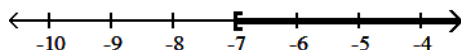
20)  $x + 8 < 1$

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



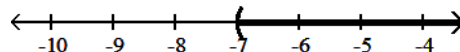
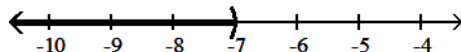
A)  $[-7, \infty)$

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



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

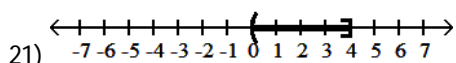
D)  $(-7, \infty)$



Answer: C

Diff: 0 Type: BI

Write interval notation for the graph.



21) \_\_\_\_\_

A)  $(0, 4)$

B)  $[0, 4]$

C)  $(0, 4]$

D)  $[0, 4)$

Answer: C

Diff: 0 Type: BI

Solve using the addition and multiplication principles together.

22)  $\frac{1}{5}f - 3 = 1$

22) \_\_\_\_\_

A) 10

B) 20

C) -10

D) -20

Answer: B

Diff: 0 Type: BI

23)  $7x + 7(-2x - 3) = -22 - 6x$

23) \_\_\_\_\_

A) -1

B) 43

C) 1

D)  $\frac{43}{13}$

Answer: C

Diff: 0 Type: BI

24)  $60 = 7x - 3$

24) \_\_\_\_\_

A) 60

B) 11

C) 56

D) 9

Answer: D

Diff: 0 Type: BI

Solve using the multiplication principle.

25)  $-39.6 = 4.4z$

25) \_\_\_\_\_

A) -30.6

B) -35.2

C) -9

D)  $-\frac{1}{9}$

Answer: C

Diff: 0 Type: BI

Solve.

- 26) If Gloria received a 3 percent raise and is now making \$24,720 a year, what was her salary before the raise? 26) \_\_\_\_\_  
A) \$25,000 B) \$22,720 C) \$23,720 D) \$24,000

Answer: D

Diff: 0 Type: BI

Solve the problem.

- 27) The number of daily calories  $K$  needed by a moderately active man who weighs  $w$  pounds, is  $h$  inches tall, and is  $y$  years old, can be estimated by the formula  $K = 19.18w + 7h - 9.52y + 92.4$ . Find the daily caloric need of a moderately active man weighing 203 lbs, who is 78 inches tall and 42 years old. 27) \_\_\_\_\_  
A) 4132.1 B) 3352.58 C) 3537.38 D) 3947.3

Answer: A

Diff: 0 Type: BI

- 28) A circle has a circumference of  $52\pi$  meters. Find the radius,  $r$ , of the circle. ( $C = 2\pi r$ ) 28) \_\_\_\_\_  
A) 52 m B) 13 m C) 26 m D) 8 m

Answer: C

Diff: 0 Type: BI

- 29) The area of a square is given by  $A = S^2$ , where  $S$  is the length of a side. What is the area of a square with side 2.7 cm? 29) \_\_\_\_\_  
A)  $29.16 \text{ cm}^2$  B)  $19 \text{ cm}^2$  C)  $5.4 \text{ cm}^2$  D)  $7.29 \text{ cm}^2$

Answer: D

Diff: 0 Type: BI

Solve.

- 30) Midtown Antiques collects 6% sales tax on all sales. If total sales including tax are \$1241.98, find the portion that is the tax. Round your answer to the nearest cent. 30) \_\_\_\_\_  
A) \$1171.68 B) \$74.52 C) \$60.30 D) \$70.30

Answer: D

Diff: 0 Type: BI

- 31) One-half of a number is 3 more than one-sixth the same number. What is the number? 31) \_\_\_\_\_  
A) 9 B) 12 C) 18 D) 8

Answer: A

Diff: 0 Type: BI

Choose the number that is a solution of the inequality.

- 32)  $9n + 9 > 8n + 5$  32) \_\_\_\_\_  
A) -3 B) -5 C) -7 D) -6

Answer: A

Diff: 0 Type: MC

Solve.

33)  $1.1x - 4.2 > 0.4x - 3.08$

A)  $(-\infty, 1.5)$

B)  $(1.5, \infty)$

C)  $(-\infty, 1.6)$

D)  $(1.6, \infty)$

33) \_\_\_\_\_

Answer: D

Diff: 0 Type: BI

34) A pie-shaped (triangular) lake-front lot has a perimeter of 2000 feet. One side is 300 feet longer than the shortest side, while the third side is 500 feet longer than the shortest side. Find the lengths of all three sides.

34) \_\_\_\_\_

A) 500 ft, 500 ft, 500 ft

B) 500 ft, 800 ft, 1000 ft

C) 400 ft, 700 ft, 900 ft

D) 100 ft, 200 ft, 300 ft

Answer: C

Diff: 0 Type: BI

35)  $\frac{1}{4}(20x + 32) - 71 > -\frac{1}{2}(10x - 14)$

35) \_\_\_\_\_

A)  $\left[-\infty, \frac{28}{5}\right]$

B)  $\left[\frac{28}{5}, \infty\right)$

C)  $[7, \infty)$

D)  $(-\infty, 7]$

Answer: C

Diff: 0 Type: BI

Solve the problem.

36) The area of a trapezoid is 84 square feet. If its two bases are 9 and 15 feet, find its height.

36) \_\_\_\_\_

$\left[A = \frac{1}{2}(b + B)h\right]$

A) 4 ft

B) 7 ft

C) 1.5 ft

D) 14 ft

Answer: B

Diff: 0 Type: BI

Solve.

37) Two pages that face each other in a book have 389 as the sum of their page numbers. What is the number of the page that comes first?

37) \_\_\_\_\_

A) 195

B) 193

C) 194

D) 192

Answer: C

Diff: 0 Type: BI

Choose the number that is a solution of the inequality.

38)  $f - 1 < -13$

38) \_\_\_\_\_

A) -13

B) -9

C) -10

D) -12

Answer: A

Diff: 0 Type: MC

Determine whether it is true or false that the given number is a solution of the equation.

39)  $8; 3x + 7x = 80.$

39) \_\_\_\_\_

A) True

B) False

Answer: A

Diff: 0 Type: BI

40)  $-10; -5x + 8 = 63.$

A) True

B) False

40) \_\_\_\_\_

Answer: B

Diff: 0 Type: BI

Solve for the given letter.

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

41) \_\_\_\_\_

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

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

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

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

Answer: A

Diff: 0 Type: BI

Determine whether it is true or false that the given number is a solution of the equation.

42)  $3; 8x = 24.$

42) \_\_\_\_\_

A) True

B) False

Answer: A

Diff: 0 Type: BI

Solve.

43)  $4(3x + 4) \geq 2(4x + 24)$

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

A)  $[16, \infty)$

B)  $(-\infty, 16]$

C)  $[8, \infty)$

D)  $(-\infty, 8]$

Answer: C

Diff: 0 Type: BI

44)  $2x + 4 < 18$

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

A)  $[7, \infty)$

B)  $(7, \infty)$

C)  $(-\infty, 7]$

D)  $(-\infty, 7)$

Answer: D

Diff: 0 Type: BI

Solve using the multiplication principle.

45)  $-18.68 = -4.67w$

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

A) -4

B) -14.01

C) 4

D) 14.01

Answer: C

Diff: 0 Type: BI

Solve.

46)  $\frac{3}{2}(4x + 3) > 21$

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

A)  $\left(-\infty, \frac{17}{4}\right)$

B)  $\left(\frac{11}{4}, \infty\right)$

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

D)  $\left(\frac{17}{4}, \infty\right)$

Answer: B

Diff: 0 Type: BI

Determine whether it is true or false that the given number is a solution of the equation.

47)  $27; \frac{-x}{6} = -6$

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

A) True

B) False

Answer: B

Diff: 0 Type: BI

Write interval notation.

48)  $\{x | x < 3\}$

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

A)  $(-\infty, 3)$

B)  $(3, \infty)$

C)  $[3, \infty)$

D)  $(-\infty, 3]$

Answer: A

Diff: 0 Type: BI

Solve the problem.

49) The area of a triangle is given by  $A = \frac{1}{2}bh$ , where  $b$  is the length of its base and  $h$  is its height. Find the area of a triangle with height 19 m and base 14 m.

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

A)  $16.5 \text{ m}^2$

B)  $266 \text{ m}^2$

C)  $532 \text{ m}^2$

D)  $133 \text{ m}^2$

Answer: D

Diff: 0 Type: BI

Solve.

50)  $3(3x + 1) < 5 - 5(3x - 3)$

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

A)  $\left(\frac{17}{24}, \infty\right)$

B)  $\left[-\infty, \frac{17}{24}\right)$

C)  $\left(-\infty, \frac{5}{24}\right)$

D)  $\left[-\frac{5}{24}, \infty\right)$

Answer: B

Diff: 0 Type: BI

Solve the problem.

51) The area of a trapezoid of height  $h$ , small base  $b$ , and large base  $B$  is given by  $A = \frac{1}{2}(b + B)h$ . Find the area of a trapezoid whose height is 7 m, small base is 12 m, and large base is 18 m.

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

A)  $75 \text{ m}^2$

B)  $105 \text{ m}^2$

C)  $216 \text{ m}^2$

D)  $15 \text{ m}^2$

Answer: B

Diff: 0 Type: BI

Solve using the addition and multiplication principles together.

52)  $4(y + 2) = 5(y - 3)$

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

A) 7

B) -7

C) 23

D) -23

Answer: C

Diff: 0 Type: BI

Solve.

53) A salesperson earned \$350 a week plus a bonus of \$22 for each service contract sold. If the pay one week was \$526 how many service contracts were sold?

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

A) 4 contracts

B) 2 contracts

C) 8 contracts

D) 16 contracts

Answer: C

Diff: 0 Type: BI



Solve for the given letter.

54)  $-8k + ar = r - 2y$  for  $r$

A)  $r = \frac{8k - 2y}{a - 1}$

B)  $r = \frac{-8k + a}{1 - 2y}$

C)  $r = \frac{-8k + 2y}{a - 1}$

D)  $r = \frac{a - 1}{8k - 2y}$

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

Answer: A

Diff: 0 Type: BI

Solve using the addition principle.

55)  $z - 8 = 12$

A) -4

B) -20

C) 20

D) 4

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

Answer: C

Diff: 0 Type: BI

Solve.

56) If three times the smaller of two consecutive integers is added to four times the larger, the result is 95. Find the smaller integer.

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

A) 14

B) 12

C) 39

D) 13

Answer: D

Diff: 0 Type: BI

Solve the problem.

57) The amount of simple interest  $I$  generated by principal  $P$ , annual interest rate  $r$ , and time  $t$  in years is given by  $I = Prt$ . Find the interest if  $t = 6$  years,  $P = \$300$ , and  $r = 0.05$ .

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

A) \$90.00

B) \$13.50

C) \$0.60

D) \$1350.00

Answer: A

Diff: 0 Type: BI

Solve using the addition principle.

58)  $z - 6.79 = -9.2$

A) -15.99

B) -2.41

C) 15.99

D) 2.41

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

Answer: B

Diff: 0 Type: BI

Solve using the addition and multiplication principles together.

59)  $\frac{1}{3}a - \frac{1}{3} = -6$

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

A) -17

B) 19

C) 17

D) -19

Answer: A

Diff: 0 Type: BI

Write interval notation.

60)  $\{x | x \geq -7\}$

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

A)  $(-7, \infty)$

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

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

D)  $[-7, \infty)$

Answer: D

Diff: 0 Type: BI

Solve using the multiplication principle.

61)  $\frac{5}{4}x = \frac{5}{20}$

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

A)  $-\frac{1}{5}$

B)  $\frac{1}{5}$

C)  $\frac{5}{16}$

D) 1

Answer: B

Diff: 0 Type: BI

Solve.

62)  $0.5(3x - 2) < 1.1 - (x + 5)$

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

A)  $\left(-\infty, -\frac{29}{25}\right)$

B)  $\left(-\infty, \frac{71}{25}\right)$

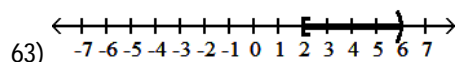
C)  $\left(-\frac{29}{25}, \infty\right)$

D)  $\left(\frac{71}{25}, \infty\right)$

Answer: A

Diff: 0 Type: BI

Write interval notation for the graph.



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

A)  $(-6, -2]$

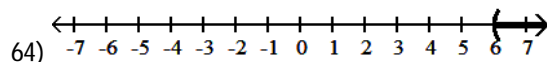
B)  $[-6, -2)$

C)  $(2, 6]$

D)  $[2, 6)$

Answer: D

Diff: 0 Type: BI



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

A)  $(-\infty, 6]$

B)  $[6, \infty)$

C)  $(6, \infty)$

D)  $(-\infty, 6)$

Answer: C

Diff: 0 Type: BI

Determine whether it is true or false that the given number is a solution of the equation.

65)  $-3; 7x - 2x = -32.$

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

A) True

B) False

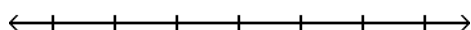
Answer: B

Diff: 0 Type: BI

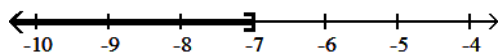
Solve and graph. Write the result in interval notation.

66)  $8x < -56$

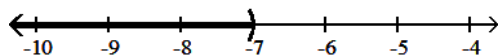
66) \_\_\_\_\_



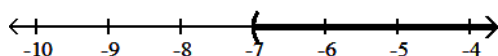
A)  $(-\infty, -7]$



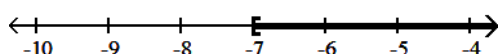
B)  $(-\infty, -7)$



C)  $(-7, \infty)$



D)  $[-7, \infty)$



Answer: B

Diff: 0 Type: BI

Solve.

67) After receiving a discount of 12.5% on its bulk order of toner cartridges, John's Office Supply pays \$6650. What was the price of the order before the discount?

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

A) \$7481

B) \$7600

C) \$5819

D) \$6151

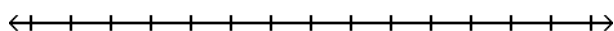
Answer: B

Diff: 0 Type: BI

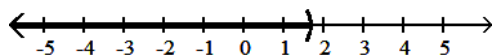
Solve and graph. Write the result in interval notation.

68)  $\frac{1}{5}x < -3$

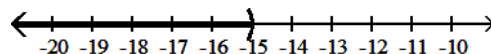
68) \_\_\_\_\_



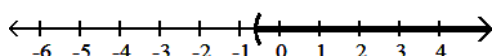
A)  $\left(-\infty, \frac{5}{3}\right)$



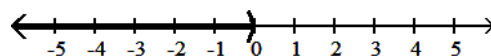
B)  $(-\infty, -15)$



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



D)  $\left(-\infty, -\frac{1}{15}\right)$



Answer: B

Diff: 0 Type: BI

Solve.

69)  $3(4x - 3) + 38 \leq 8x + 1$

A)  $(7, \infty)$

B)  $[7, \infty)$

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

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

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

Answer: D

Diff: 0 Type: BI

Write interval notation.

70)  $\{x | -5 < x < -1\}$

A)  $(-5, -1]$

B)  $[-5, -1)$

C)  $[-5, -1]$

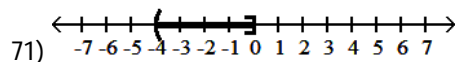
D)  $(-5, -1)$

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

Answer: D

Diff: 0 Type: BI

Write interval notation for the graph.



A)  $[-4, 0]$

B)  $[-4, 0)$

C)  $(-4, 0]$

D)  $(-4, 0)$

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

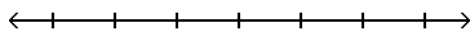
Answer: C

Diff: 0 Type: BI

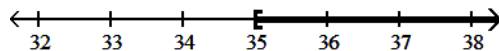
Solve and graph. Write the result in interval notation.

72)  $0.2k > 7$

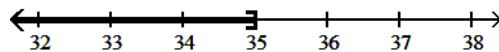
72) \_\_\_\_\_



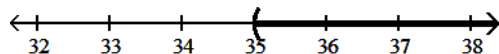
A)  $[35, \infty)$



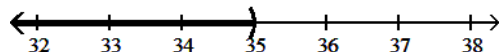
B)  $(-\infty, 35]$



C)  $(35, \infty)$



D)  $(-\infty, 35)$

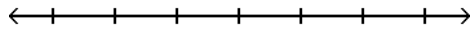


Answer: C

Diff: 0 Type: BI

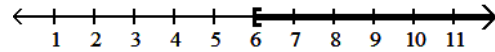
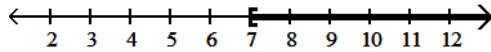
73)  $\frac{6}{7}x \geq 6$

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



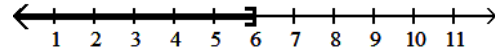
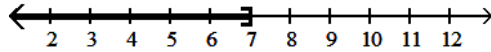
A)  $[7, \infty)$

B)  $[6, \infty)$



C)  $(\infty, 7]$

D)  $(\infty, 6]$



Answer: A

Diff: 0 Type: BI

Determine whether it is true or false that the given number is a solution of the equation.

74)  $-8; 8x = -62.$

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

A) True

B) False

Answer: B

Diff: 0 Type: BI

Write interval notation.

75)  $\{x | x \leq 0\}$

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

A)  $(0, \infty)$

B)  $(-\infty, 0]$

C)  $(\infty, 0)$

D)  $[0, \infty)$

Answer: B

Diff: 0 Type: BI

Solve.

76) The sum of three consecutive odd integers is 219. Find the integers.

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

A) 75, 77, 79

B) 71, 73, 75

C) 66, 67, 68

D) 73, 75, 77

Answer: B

Diff: 0 Type: BI

77)  $-\frac{3}{4}x \leq -\frac{7}{8}$

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

A)  $\left[-\infty, \frac{7}{6}\right]$

B)  $\left[-\infty, \frac{21}{32}\right]$

C)  $\left[\frac{21}{32}, \infty\right)$

D)  $\left[\frac{7}{6}, \infty\right)$

Answer: D

Diff: 0 Type: BI

78) In a local election, 25,000 people voted. This was a decrease of 14% less than the last election. How many people voted in the last election? Round your answer to the nearest whole number of people.

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

A) 29,070 people

B) 21,930 people

C) 28,500 people

D) 21,500 people

Answer: A

Diff: 0 Type: BI

Solve using the addition principle.

79)  $a + 2 = 3$

A) -1

B) -5

C) 1

D) 5

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

Answer: C

Diff: 0 Type: BI

80)  $16 = -23 + a$

A) 39

B) -7

C) -39

D) 7

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

Answer: A

Diff: 0 Type: BI

Choose the number that is a solution of the inequality.

81)  $8n - 12 \leq 7n - 15$

A) -3

B) 0

C) -1

D) -2

81) \_\_\_\_\_

Answer: A

Diff: 0 Type: MC

Solve.

- 82) In a triangular cross-section of a lean-to for water fowl in an aviary, the second angle is 4 times as large as the first angle. The measure of the third angle is  $30^\circ$  greater than that of the first angle. How large are the angles?

82) \_\_\_\_\_

A)  $73^\circ, 284^\circ, 101^\circ$

B)  $25^\circ, 100^\circ, 55^\circ$

C)  $25^\circ, 155^\circ, 155^\circ$

D)  $73^\circ, 54.5^\circ, 39.5^\circ$

Answer: B

Diff: 0 Type: BI

Solve using the addition and multiplication principles together.

83)  $9x + 2 = 47 + 9x$

A) 36

C) 40

B) No Solution

D) All real numbers

83) \_\_\_\_\_

Answer: B

Diff: 0 Type: BI

Solve.

84)  $\frac{1}{3}(x + 3) > \frac{1}{6}(7x + 5)$

84) \_\_\_\_\_

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

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

C)  $\left[-\frac{1}{5}, \infty\right)$

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

Answer: D

Diff: 0 Type: BI

- 85) In a local election, 20,400 people voted. This was an increase of 7% over the last election. How many people voted in the last election? Round your answer to the nearest whole number of people.

85) \_\_\_\_\_

A) 18,972 people

B) 21,935 people

C) 19,065 people

D) 21,828 people

Answer: C

Diff: 0 Type: BI

86) The sum of three consecutive integers is 432. Find the integers.

A) 144, 145, 146

B) 142, 144, 146

C) 142, 143, 144

D) 143, 144, 145

86) \_\_\_\_\_

Answer: D

Diff: 0 Type: BI

87) At the end of the day, a storekeeper had \$1144 in the cash register, counting both the sale of goods and the sales tax of 4%. Find the amount that is the tax.

A) \$34

B) \$44

C) \$49

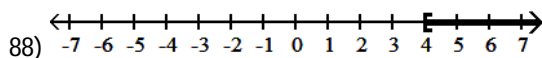
D) \$39

87) \_\_\_\_\_

Answer: B

Diff: 0 Type: BI

Write interval notation for the graph.



A)  $(-\infty, 4]$

B)  $(-\infty, 4)$

C)  $(4, \infty)$

D)  $[4, \infty)$

88) \_\_\_\_\_

Answer: D

Diff: 0 Type: BI

Solve using the addition and multiplication principles together.

89)  $13(x - 52) = 26$

A) 54

B) 26

C) 50

D) 52

89) \_\_\_\_\_

Answer: A

Diff: 0 Type: BI

Solve.

90) A speedboat moves at a rate of 11 km/hr in still water. How long will it take someone to ride the boat 12 km upstream if the river's current moves at a rate of 7 km/hr?

A) 0.3 hr

B) 48 hr

C) 0 hr

D) 3 hr

90) \_\_\_\_\_

Answer: D

Diff: 0 Type: BI

Solve for the given letter.

91)  $A = P(1 + nr)$  for  $r$

A)  $r = \frac{Pn}{A - P}$

B)  $r = \frac{A - P}{Pn}$

C)  $r = \frac{A}{n}$

D)  $r = \frac{P - A}{Pn}$

91) \_\_\_\_\_

Answer: B

Diff: 0 Type: BI

92)  $P = s_1 + s_2 + s_3$  for  $s_2$

A)  $s_2 = s_1 + s_3 - P$

B)  $s_2 = P - s_1 - s_3$

C)  $s_2 = P + s_1 + s_3$

D)  $s_2 = s_1 + P - s_3$

92) \_\_\_\_\_

Answer: B

Diff: 0 Type: BI

Solve using the addition and multiplication principles together.

93)  $4x - (3x - 1) = 2$

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

93) \_\_\_\_\_

Answer: C

Diff: 0    Type: BI

Solve using the multiplication principle.

94)  $2b = -30$

- A) -15                      B) 32                      C) 1                      D) -32

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

Answer: A

Diff: 0    Type: BI

Solve using the addition principle.

95)  $x + \frac{1}{5} = -\frac{1}{25}$

- A)  $-\frac{31}{125}$                       B)  $-\frac{2}{25}$                       C)  $-\frac{1}{15}$                       D)  $-\frac{6}{25}$

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

Answer: D

Diff: 0    Type: BI

Solve using the addition and multiplication principles together.

96)  $6(x + 3) - (6x + 18) = 0$

- A) No solution                      B) 0  
C) All real numbers                      D) 3

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

Answer: C

Diff: 0    Type: BI

97)  $9y + 4 = 7 - 3y$

- A) 4                      B)  $\frac{6}{11}$                       C) -4                      D)  $\frac{1}{4}$

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

Answer: D

Diff: 0    Type: BI

98)  $9n - 4 = 23$

- A) 22                      B) 3                      C) 6                      D) 18

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

Answer: B

Diff: 0    Type: BI

Determine whether it is true or false that the given number is a solution of the equation.

99) -8;  $10(y - 11) = 190$

- A) True                      B) False

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

Answer: B

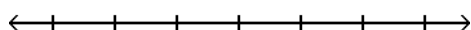
Diff: 0    Type: BI



Solve and graph. Write the result in interval notation.

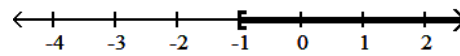
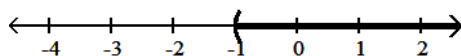
100)  $a - 6 > -7$

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



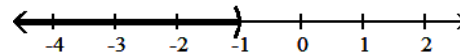
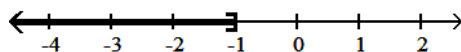
A)  $(-1, \infty)$

B)  $[-1, \infty)$



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

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



Answer: A

Diff: 0 Type: BI

Solve.

101)  $-0.2x \geq -0.6$

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

A)  $(-\infty, -0.4]$

B)  $[3, \infty)$

C)  $[0.4, \infty)$

D)  $(-\infty, 3]$

Answer: D

Diff: 0 Type: BI

Solve using the multiplication principle.

102)  $9x = 36$

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

A)  $\frac{1}{4}$

B) 27

C) 4

D) 324

Answer: C

Diff: 0 Type: BI

Determine whether it is true or false that the given number is a solution of the equation.

103)  $48; \frac{-x}{8} = -6$

103) \_\_\_\_\_

A) True

B) False

Answer: A

Diff: 0 Type: BI

Solve for the given letter.

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

104) \_\_\_\_\_

A)  $h = \frac{S}{2\pi r} - 1$

B)  $h = S - r$

C)  $h = \frac{S - 2\pi r^2}{2\pi r}$

D)  $h = 2\pi(S - r)$

Answer: C

Diff: 0 Type: BI

Write interval notation.

105)  $\{x | -3 \leq x \leq 1\}$

105) \_\_\_\_\_

A)  $[-3, 1]$

B)  $(-3, 1)$

C)  $(-3, 1]$

D)  $[-3, 1)$

Answer: A

Diff: 0 Type: BI

Solve.

106)  $-2x - (6x + 9) > 4 - (4x + 1)$

A)  $(-\infty, 1)$

B)  $(-3, \infty)$

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

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

106) \_\_\_\_\_

Answer: C

Diff: 0 Type: BI

Solve using the addition principle.

107)  $-15 = y - 62$

A) -47

B) -77

C) 47

D) 77

107) \_\_\_\_\_

Answer: C

Diff: 0 Type: BI

Solve.

108) In order for a chemical reaction to take place, the Fahrenheit temperature  $F$  of the reagents must be at least  $107.83^\circ \text{F}$ . At what Celsius temperatures  $C$  will the reaction occur?  $\left(F = \frac{9}{5}C + 32\right)$

108) \_\_\_\_\_

A)  $\{C \mid C \leq 42.13^\circ\}$

B)  $\{C \mid C < 226.09^\circ\}$

C)  $\{C \mid C \geq 226.09^\circ\}$

D) 9

E)  $\{C \mid C \geq 42.13^\circ\}$

Answer: E

Diff: 0 Type: BI

Solve using the addition and multiplication principles together.

109)  $5(4x - 1) = 20$

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

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

C)  $\frac{21}{20}$

D)  $\frac{3}{4}$

109) \_\_\_\_\_

Answer: A

Diff: 0 Type: BI

Solve using the addition principle.

110)  $-\frac{3}{4} + y = -\frac{1}{12}$

110) \_\_\_\_\_

A) 2

B)  $\frac{2}{3}$

C)  $\frac{1}{6}$

D)  $\frac{1}{4}$

Answer: B

Diff: 0 Type: BI

Solve.

111) The following is a real estate commission on the selling price of a house.

111) \_\_\_\_\_

9% for the first \$100,000, and  
3% for the amount which exceeds \$100,000

A realtor receives \$16,530.00 for selling a house. What was the selling price?

- A) \$451,000      B) \$7530      C) \$251,000      D) \$351,000

Answer: D

Diff: 0    Type: BI

112)  $20z + 30 > 5(3z + 10)$

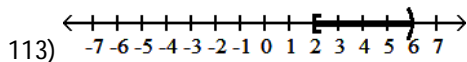
112) \_\_\_\_\_

- A)  $(-\infty, 20)$       B)  $(4, \infty)$       C)  $(-\infty, 4)$       D)  $(20, \infty)$

Answer: B

Diff: 0    Type: BI

Write interval notation for the graph.



113) \_\_\_\_\_

- A)  $[-6, -2)$       B)  $(-6, -2]$       C)  $[2, 6)$       D)  $(2, 6]$

Answer: C

Diff: 0    Type: BI

Solve.

114) The difference between two positive integers is 46. One integer is three times as great as the other. Find the integers.

114) \_\_\_\_\_

- A) 46 and 69      B) 23 and 46      C) 69 and 115      D) 23 and 69

Answer: D

Diff: 0    Type: BI

Solve for the given letter.

115)  $V = \frac{1}{3}Bh$  for h

115) \_\_\_\_\_

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

Answer: A

Diff: 0    Type: BI

116)  $w = \frac{3y - x}{y}$  for y

116) \_\_\_\_\_

- A)  $y = \frac{-x}{w - 3}$       B)  $y = \frac{x}{w - 3}$       C)  $y = \frac{w - 3}{-x}$       D)  $y = \frac{3 - x}{w}$

Answer: A

Diff: 0    Type: BI

Solve.

117)  $\frac{1}{12}(3x + 1) \leq -\frac{1}{2} + \frac{1}{6}(4x + 1)$

117) \_\_\_\_\_

A)  $[-1, \infty)$

B)  $[1, \infty)$

C)  $(1, \infty)$

D)  $(-\infty, 1]$

Answer: B

Diff: 0 Type: BI

Choose the number that is a solution of the inequality.

118)  $a - 11 < -18$

118) \_\_\_\_\_

A) -8

B) 8

C) -3

D) -5

Answer: A

Diff: 0 Type: MC

Solve using the multiplication principle.

119)  $-\frac{1}{4}x = 2$

119) \_\_\_\_\_

A) -1

B) -8

C) -2

D) -3

Answer: B

Diff: 0 Type: BI

Solve the problem.

120) The surface area of a cylinder with height,  $h$ , and base radius,  $r$ , is given by  $A = 2\pi rh + 2\pi r^2$ . Using 3.14 for  $\pi$ , find the surface area of a cylinder with a radius of 5 cm and a height of 20 cm.

120) \_\_\_\_\_

A) 785 cm<sup>2</sup>

B) 659.4 cm<sup>2</sup>

C) 628 cm<sup>2</sup>

D) 3768 cm<sup>2</sup>

Answer: A

Diff: 0 Type: BI

Solve using the addition and multiplication principles together.

121)  $\frac{1}{4}(8x - 20) = \frac{1}{5}(25x - 10)$

121) \_\_\_\_\_

A)  $\frac{1}{10}$

B) -1

C) -10

D) 1

Answer: B

Diff: 0 Type: BI

Determine whether it is true or false that the given number is a solution of the equation.

122)  $20; 5(y - 8) = 60$

122) \_\_\_\_\_

A) True

B) False

Answer: A

Diff: 0 Type: BI

Solve.

123) On Monday, an investor bought 100 shares of stock. On Tuesday, the value of the shares went up 8%. How much did the investor pay for the 100 shares if he sold them Wednesday morning for \$1512?

123) \_\_\_\_\_

A) \$1633

B) \$1462

C) \$1400

D) \$1450

Answer: C

Diff: 0 Type: BI

Solve using the addition and multiplication principles together.

124)  $168 = 15x + 18$

A) 135

B) 6

C) 139

D) 10

124) \_\_\_\_\_

Answer: D

Diff: 0 Type: BI

Solve.

125) A speedboat moves at a rate of 14 km/hr in still water. How long will it take someone to ride the boat 69 km downstream if the river's current moves at a rate of 9 km/hr?

125) \_\_\_\_\_

A) 0.3 hr

B) 13 hr

C) 1587 hr

D) 3 hr

Answer: D

Diff: 0 Type: BI

Solve using the addition and multiplication principles together.

126)  $-9p + 5 = 3 + 8p$

126) \_\_\_\_\_

A)  $-\frac{1}{8}$

B)  $\frac{2}{17}$

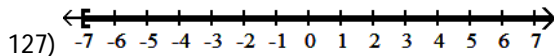
C)  $-\frac{17}{2}$

D)  $\frac{17}{2}$

Answer: B

Diff: 0 Type: BI

Write interval notation for the graph.



127) \_\_\_\_\_

A)  $[-7, \infty)$

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

C)  $(-7, \infty)$

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

Answer: A

Diff: 0 Type: BI

Solve.

128) Bill swims at a speed of 5.9 mph in still water. The river he's in flows at a speed of 3.4 mph. How long will it take Bill to swim 2.3 mi upstream? Round your answer to the nearest tenth of an hour, if necessary.

128) \_\_\_\_\_

A) 0.9 hr

B) 0.2 hr

C) 1.1 hr

D) 5.8 hr

Answer: A

Diff: 0 Type: BI

129) If the first and third of three consecutive odd integers are added, the result is 87 less than five times the second integer. Find the third integer.

129) \_\_\_\_\_

A) 58

B) 29

C) 27

D) 31

Answer: D

Diff: 0 Type: BI

Solve using the addition and multiplication principles together.

130)  $\frac{2}{5}x - \frac{1}{3}x = 4$

130) \_\_\_\_\_

A) 120

B) -120

C) 60

D) -60

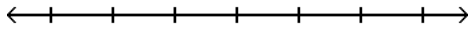
Answer: C

Diff: 0 Type: BI

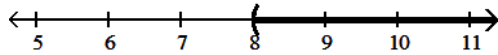
Solve and graph. Write the result in interval notation.

131)  $9x \leq 72$

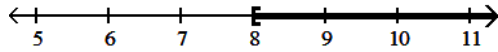
131) \_\_\_\_\_



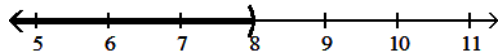
A)  $(8, \infty)$



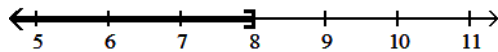
B)  $[8, \infty)$



C)  $(-\infty, 8)$



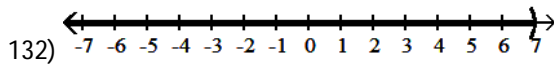
D)  $(-\infty, 8]$



Answer: D

Diff: 0 Type: BI

Write interval notation for the graph.



132)

A)  $(7, -\infty)$

B)  $[7, \infty)$

C)  $(-\infty, 7]$

D)  $(-\infty, 7)$

132) \_\_\_\_\_

Answer: D

Diff: 0 Type: BI

Solve.

133)  $47 - (5x + 4) \leq 3(x - 4) + 3x$

A)  $[5, \infty)$

B)  $\left[-\infty, \frac{63}{11}\right]$

C)  $(-\infty, 5]$

D)  $\left[\frac{63}{11}, \infty\right)$

133) \_\_\_\_\_

Answer: A

Diff: 0 Type: BI

Solve using the addition and multiplication principles together.

134)  $12(2c - 9) = 7c - 7$

A)  $-\frac{101}{17}$

B)  $\frac{101}{31}$

C)  $\frac{101}{17}$

D)  $\frac{115}{17}$

134) \_\_\_\_\_

Answer: C

Diff: 0 Type: BI

Solve.

135) A plane traveling 370 mph in still air encounters a 65-mph headwind. How long will it take the plane to travel 805 mi into the wind? Round your answer to the nearest tenth of an hour, if necessary.

A) 1.9 hr

B) 2.6 hr

C) 245,525 hr

D) 0.4 hr

135) \_\_\_\_\_

Answer: B

Diff: 0 Type: BI

- 136) A plane climbs from an altitude of 6000 ft to a cruising altitude of 30,000 ft. The plane ascends at a rate of 6000 ft/min. How long will it take to reach cruising altitude? 136) \_\_\_\_\_
- A) 0.3 min                      B) 4 min                      C) 144,000,000 min                      D) 6 min

Answer: B

Diff: 0    Type: BI

- 137)  $10x - 6 \geq 4x - 54$  137) \_\_\_\_\_
- A)  $(-\infty, 8]$                       B)  $[-8, \infty)$                       C)  $(-\infty, -8)$                       D)  $(8, \infty)$

Answer: B

Diff: 0    Type: BI

Determine whether it is true or false that the given number is a solution of the equation.

- 138)  $12; 9x - 6 = 102$ . 138) \_\_\_\_\_
- A) True                                      B) False

Answer: A

Diff: 0    Type: BI

Solve.

- 139) Stevie bought a stereo for \$290 and put it on sale at his store at a 70% markup rate. What was the retail price of the stereo? 139) \_\_\_\_\_
- A) \$390.00                      B) \$580.00                      C) \$393.00                      D) \$493.00

Answer: D

Diff: 0    Type: BI

Solve using the addition and multiplication principles together.

- 140)  $3(2z - 5) = 5(z + 4)$  140) \_\_\_\_\_
- A) 5                                      B) 35                                      C) -5                                      D) 8

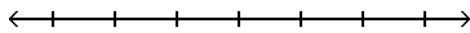
Answer: B

Diff: 0    Type: BI

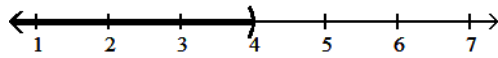
Solve and graph. Write the result in interval notation.

141)  $f - 5 < -1$

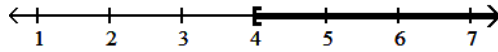
141) \_\_\_\_\_



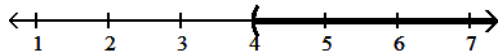
A)  $(-\infty, 4)$



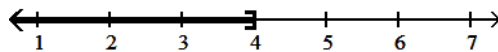
B)  $[4, \infty)$



C)  $(4, \infty)$



D)  $(-\infty, 4]$



Answer: A

Diff: 0 Type: BI

Solve.

142)  $-5(2x + 1) \geq 3[3x - 2(x + 1)]$

142) \_\_\_\_\_

A)  $\left[-\infty, -\frac{1}{13}\right]$

B)  $\left[\frac{1}{13}, \infty\right)$

C)  $\left[-\infty, \frac{1}{13}\right]$

D)  $\left[-\infty, -\frac{11}{7}\right]$

Answer: C

Diff: 0 Type: BI

143)  $7(k - 6) < -8 + (6k + 5)$

143) \_\_\_\_\_

A)  $(-\infty, 39)$

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

C)  $(-\infty, -55)$

D)  $(-\infty, -39)$

Answer: A

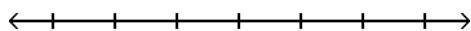
Diff: 0 Type: BI



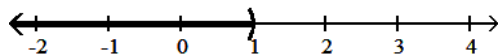
Solve and graph. Write the result in interval notation.

144)  $f + 9 \leq 10$

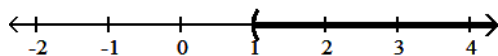
144) \_\_\_\_\_



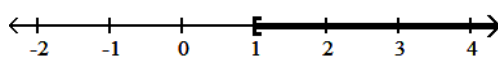
A)  $(-\infty, 1)$



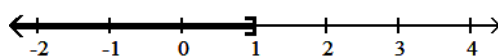
B)  $(1, \infty)$



C)  $[1, \infty)$



D)  $(-\infty, 1]$



Answer: D

Diff: 0 Type: BI

Solve for the given letter.

145)  $A = \frac{1}{2}h(b_1 + b_2)$  for  $b_1$

145) \_\_\_\_\_

A)  $b_1 = \frac{h(b_2) - 2A}{h}$

B)  $b_1 = \frac{2A - (h)(b_2)}{h}$

C)  $b_1 = \frac{A - h(b_2)}{2h}$

D)  $b_1 = \frac{(b_2)2A - h}{h}$

Answer: B

Diff: 0 Type: BI

Solve using the multiplication principle.

146)  $-\frac{y}{5} = 21$

146) \_\_\_\_\_

A) 105

B) -26

C) -105

D) -100

Answer: C

Diff: 0 Type: BI

Solve using the addition principle.

147)  $-26.1 - z = 26.0$

147) \_\_\_\_\_

A) 0.1

B) -0.1

C) -52.1

D) 52.1

Answer: C

Diff: 0 Type: BI

Choose the number that is a solution of the inequality.

148)  $11t + 7 \geq 10t + 5$

A) -2

B) -4

C) -3

D) -5

148) \_\_\_\_\_

Answer: A

Diff: 0 Type: MC

Solve using the addition and multiplication principles together.

149)  $\frac{1}{4}p - \frac{3}{8}p = 2$

A) -16

B) 14

C) 16

D) -14

149) \_\_\_\_\_

Answer: A

Diff: 0 Type: BI

Solve for the given letter.

150)  $I = \frac{nE}{nr + R}$  for n

A)  $n = \frac{-IR}{Ir - E}$

B)  $n = IR(Ir - E)$

C)  $n = \frac{-R}{Ir - E}$

D)  $n = \frac{IR}{Ir + E}$

150) \_\_\_\_\_

Answer: A

Diff: 0 Type: BI

## Answer Key

Testname: CH1\_P1

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

## Answer Key

Testname: CH1\_P1

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

## Answer Key

Testname: CH1\_P1

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

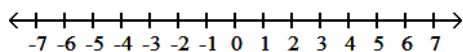
Name \_\_\_\_\_

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

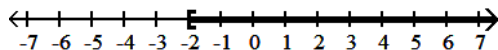
Solve and graph.

1)  $-3x + 1 \geq 7$  or  $6x + 3 \geq -21$

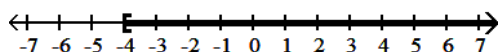
1) \_\_\_\_\_



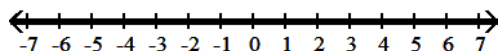
A)  $[-2, \infty)$



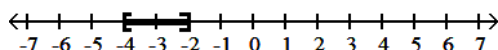
B)  $[-4, \infty)$



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



D)  $[-4, -2]$



Answer: C

Diff: 0 Type: BI

Solve.

- 2) Company A rents copiers for a monthly charge of \$240 plus 8 cents per copy. Company B rents copiers for a monthly charge of \$480 plus 4 cents per copy. What is the number of copies above which Company A's charges are the higher of the two?

2) \_\_\_\_\_

A) 3000 copies

B) 6000 copies

C) 6100 copies

D) 12,000 copies

Answer: B

Diff: 0 Type: BI

3)  $|x + 7| - 4 = 14$

3) \_\_\_\_\_

A)  $\{-11, 11\}$

B)  $\{-25, 11\}$

C)  $\{-3, 11\}$

D)  $\{17, 11\}$

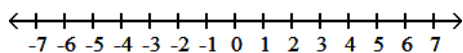
Answer: B

Diff: 0 Type: BI

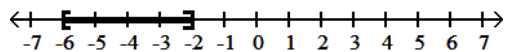
Solve and graph.

4)  $2x - 1 \geq -13$  and  $2x - 1 \leq -5$

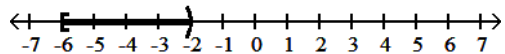
4) \_\_\_\_\_



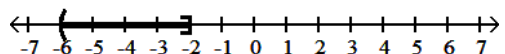
A)  $[-6, -2]$



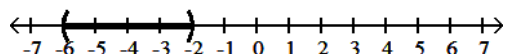
B)  $[-6, -2)$



C)  $(-6, -2]$



D)  $(-6, -2)$



Answer: A

Diff: 0 Type: BI

Simplify.

5)  $\left| \frac{x^2}{-y} \right|$

5) \_\_\_\_\_

A)  $\frac{x^2}{|y|}$

B)  $\frac{x^2}{|-y|}$

C)  $\left| \frac{x^2}{-y} \right|$

D)  $\frac{x^2}{y}$

Answer: A

Diff: 0 Type: BI

6)  $\left| \frac{-5}{x} \right|$

6) \_\_\_\_\_

A)  $\frac{|-5|}{x}$

B)  $\frac{-5}{x}$

C)  $\frac{5}{|x|}$

D)  $\frac{5}{x}$

Answer: C

Diff: 0 Type: BI

Find the indicated intersection or union.

7)  $\{q, s, u, v, w, x\} \cap \emptyset$

7) \_\_\_\_\_

A)  $\{q, s, u, v, w, x\}$

B)  $\emptyset$

C)  $\{q, s, u, v, w\}$

D)  $\{q\}$

Answer: B

Diff: 0 Type: BI

Solve.

8)  $|7x + 6| = |1 - 6x|$

8) \_\_\_\_\_

A)  $\left\{ -5, -\frac{7}{13} \right\}$

B)  $\left\{ -\frac{5}{13}, -7 \right\}$

C)  $\left\{ -\frac{7}{13}, 1 \right\}$

D)  $\left\{ \frac{7}{13}, 1 \right\}$

Answer: B

Diff: 0 Type: BI

9)  $|x - 7| = -9$

A)  $\emptyset$

B)  $\{-16, 2\}$

C)  $\{16, -2\}$

D)  $\{16\}$

9) \_\_\_\_\_

Answer: A

Diff: 0 Type: BI

10)  $-\frac{1}{3} \leq \frac{5x - 1}{12} < \frac{1}{3}$

A)  $\left[-\frac{11}{15}, \frac{13}{15}\right)$

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

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

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

10) \_\_\_\_\_

Answer: B

Diff: 0 Type: BI

Simplify.

11)  $|10x^2|$

A)  $|10|x^2|$

B)  $10x$

C)  $10|x^2|$

D)  $10x^2$

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

Answer: D

Diff: 0 Type: BI

Solve.

12)  $\left|\frac{7 - 6x}{6}\right| = \left|\frac{7x - 3}{8}\right|$

A)  $\left\{\frac{37}{45}\right\}$

B)  $\left\{\frac{59}{48}, -38\right\}$

C)  $\left\{\frac{59}{48}\right\}$

D)  $\left\{\frac{37}{45}, \frac{19}{3}\right\}$

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

Answer: D

Diff: 0 Type: BI

13)  $\left|\frac{1}{3}x - 2\right| = \left|\frac{3}{4}x + 3\right|$

A)  $\left\{-12, -\frac{12}{13}\right\}$

B)  $\{-1\}$

C)  $\left\{-1, -\frac{1}{13}\right\}$

D)  $\{-12\}$

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

Answer: A

Diff: 0 Type: BI

14)  $|5s - 8| = |s + 6|$

A)  $\left\{\frac{7}{2}\right\}$

B)  $\left\{\frac{7}{2}, \frac{1}{3}\right\}$

C)  $\left\{-\frac{7}{2}, -\frac{1}{3}\right\}$

D)  $\emptyset$

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

Answer: B

Diff: 0 Type: BI

Find the indicated intersection or union.

15)  $\{1, 8, 14, 18, 22\} \cap \{8, 18, 22, 27\}$

A)  $\{8, 18, 22\}$

B)  $\{8, 18, 22, 27\}$

C)  $\{1, 8, 14, 18, 22, 27\}$

D)  $\{1, 8, 18, 22\}$

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

Answer: A

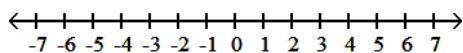
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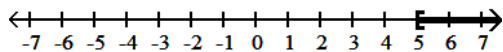
Solve and graph.

16)  $2x + 6 \geq 14$  and  $4x - 5 \geq 15$

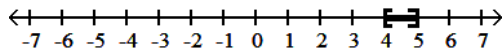
16) \_\_\_\_\_



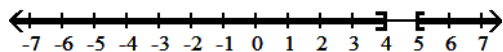
A)  $[5, \infty)$



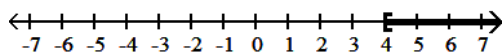
B)  $[4, 5]$



C)  $(-\infty, 4] \cup [5, \infty)$



D)  $[4, \infty)$



Answer: A

Diff: 0 Type: BI

Solve.

17)  $|3x| = 24$

A)  $\{21\}$

B)  $\{-8, 8\}$

C)  $\{8\}$

D)  $\{72\}$

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

Answer: B

Diff: 0 Type: BI

Provide an appropriate response..

18) Give an equation or inequality that states that the distance between  $4x$  and  $-5$  is greater than 6.

A)  $|4x + 5| > 6$

B)  $4x - 5 < -6$

C)  $|4x + 5| < 6$

D)  $4x + 5 > 6$

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

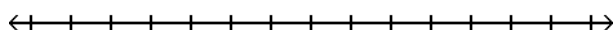
Answer: A

Diff: 0 Type: BI

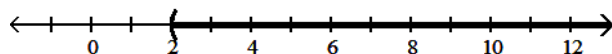
Solve the compound inequality. Express the solution using interval notation. Graph the solution set.

19)  $x < 2$  or  $x < 9$

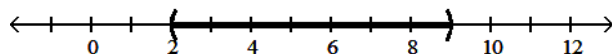
19) \_\_\_\_\_



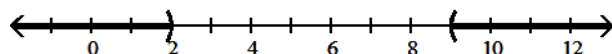
A)  $(2, \infty)$



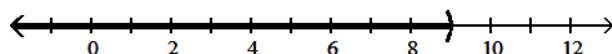
B)  $(2, 9)$



C)  $(-\infty, 2) \cup (9, \infty)$



D)  $(-\infty, 9)$



Answer: D

Diff: 0 Type: BI

Solve.

20)  $-13 \leq -3c + 2 < -4$

A)  $(-5, -2]$

B)  $(2, 5]$

C)  $[-5, -2)$

D)  $[2, 5)$

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

Answer: B

Diff: 0 Type: BI

Simplify.

21)  $|-5x^2|$

A)  $5x$

B)  $5|x^2|$

C)  $-5x^2$

D)  $5x^2$

21) \_\_\_\_\_

Answer: D

Diff: 0 Type: BI

Solve.

22)  $4 \leq \frac{5}{2}x - 1 < 19$

A)  $[2, 3)$

B)  $(2, 3]$

C)  $[2, 8)$

D)  $(2, 8]$

22) \_\_\_\_\_

Answer: C

Diff: 0 Type: BI

Solve the absolute value inequality. Write the solution set using interval notation.

23)  $|x| \leq 4$

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

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

C)  $[-4, 4]$

D)  $(-\infty, 4]$

23) \_\_\_\_\_

Answer: C

Diff: 0 Type: BI

24)  $\left| \frac{5 - 2x}{6} \right| \leq 2$

24) \_\_\_\_\_

A)  $\left[ -\infty, -\frac{7}{2} \right] \cup \left[ \frac{17}{2}, \infty \right)$

B)  $\left( -\infty, -\frac{7}{2} \right) \cap \left( \frac{17}{2}, \infty \right)$

C)  $\left[ -\frac{7}{2}, \frac{17}{2} \right]$

D)  $\emptyset$

Answer: C

Diff: 0 Type: BI

Solve.

25)  $|-3x + 7| = |2 + 8x|$

25) \_\_\_\_\_

A)  $\left\{ \frac{5}{11}, \frac{9}{5} \right\}$

B)  $\left\{ \frac{5}{11}, -\frac{9}{5} \right\}$

C)  $\emptyset$

D)  $\left\{ \frac{5}{11} \right\}$

Answer: B

Diff: 0 Type: BI

26)  $|x| = 3.4$

26) \_\_\_\_\_

A)  $\{3.4\}$

B)  $\{1156\}$

C)  $\{3.4, -3.4\}$

D)  $\{-3.4\}$

Answer: C

Diff: 0 Type: BI

27)  $-4 < x + 6 < 8$

27) \_\_\_\_\_

A)  $(-14, -2)$

B)  $(2, 14)$

C)  $(-10, 2)$

D)  $(-10, 14)$

Answer: C

Diff: 0 Type: BI

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

Provide an appropriate response..

28) True or false: The solution of the equation  $7y - 6 = 7y + 3$  is zero.

28) \_\_\_\_\_

Answer: False. It has no solution.

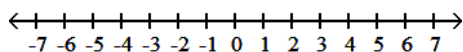
Diff: 0 Type: SA

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

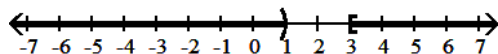
Solve and graph.

29)  $6x - 4 < 2x$  or  $-2x \leq -6$

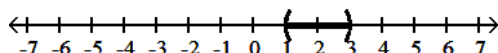
29) \_\_\_\_\_



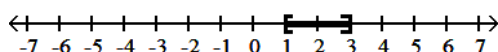
A)  $(-\infty, 1) \cup [3, \infty)$



B)  $(1, 3)$



C)  $[1, 3]$



D)  $\emptyset$

Answer: A

Diff: 0 Type: BI

Simplify.

30)  $\left| \frac{-14x^2}{7x} \right|$

30) \_\_\_\_\_

A)  $|2x|$

B)  $-2x$

C)  $2|x|$

D)  $2x$

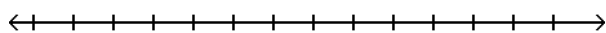
Answer: C

Diff: 0 Type: BI

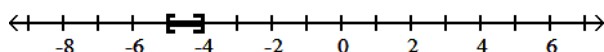
Solve the compound inequality. Express the solution using interval notation. Graph the solution set.

31)  $x < -4$  or  $x > 5$

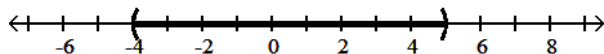
31) \_\_\_\_\_



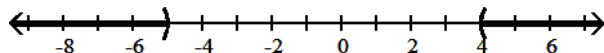
A)  $[-5, -4]$



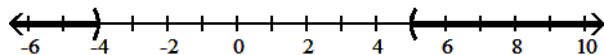
B)  $(-4, 5)$



C)  $(-\infty, -5) \cup (4, \infty)$



D)  $(-\infty, -4) \cup (5, \infty)$



Answer: D

Diff: 0 Type: BI

Find the distance between the points on a number line.

32) -20, 13

A) -33

B) 33

C) -7

D) 7

32) \_\_\_\_\_

Answer: B

Diff: 0 Type: BI

Solve.

33)  $|y - 5| = |5 - y|$

A) {5}

C) {0}

B) all real numbers

D)  $\emptyset$

33) \_\_\_\_\_

Answer: B

Diff: 0 Type: BI

34)  $6|x| + 5 = 12$

A)  $\left\{\frac{17}{6}\right\}$

B)  $\left\{\frac{17}{6}, -\frac{17}{6}\right\}$

C)  $\left\{\frac{7}{6}\right\}$

D)  $\left\{\frac{7}{6}, -\frac{7}{6}\right\}$

34) \_\_\_\_\_

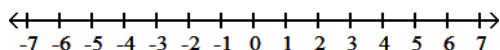
Answer: D

Diff: 0 Type: BI

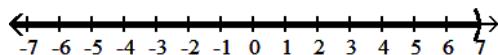
Solve and graph.

35)  $x < 4$  or  $x < 7$

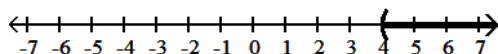
35) \_\_\_\_\_



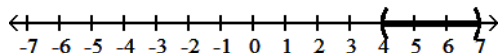
A)  $(-\infty, 7)$



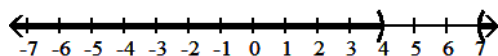
B)  $(4, \infty)$



C)  $(4, 7)$



D)  $(-\infty, 4) \cup (7, \infty)$



Answer: A

Diff: 0 Type: BI

Find the indicated intersection or union.

36)  $\{q, s, u, v, w, x\} \cup \emptyset$

A)  $\{q, s, u, v, w\}$

B) {q}

C)  $\emptyset$

D)  $\{q, s, u, v, w, x\}$

36) \_\_\_\_\_

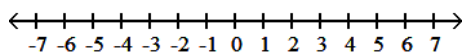
Answer: D

Diff: 0 Type: BI

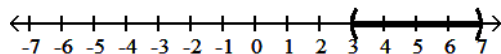
Solve and graph.

37)  $17 < 6x - 1$  and  $8x + 3 < 59$

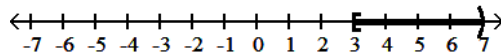
37) \_\_\_\_\_



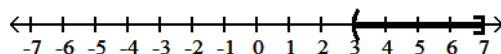
A)  $(3, 7)$



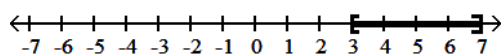
B)  $[3, 7)$



C)  $(3, 7]$



D)  $[3, 7]$

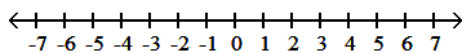


Answer: A

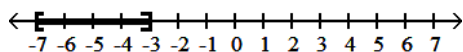
Diff: 0 Type: BI

38)  $x \leq 3$  or  $x \geq 7$

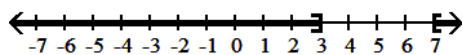
38) \_\_\_\_\_



A)  $[-7, -3]$



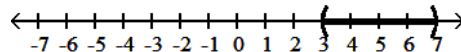
C)  $(-\infty, 3] \cup [7, \infty)$



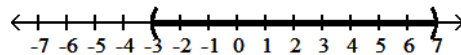
Answer: C

Diff: 0 Type: BI

B)  $(3, 7)$



D)  $(-3, 7)$



Find the distance between the points on a number line.

39)  $-9, 1$

39) \_\_\_\_\_

A)  $-10$

B)  $-8$

C)  $10$

D)  $8$

Answer: C

Diff: 0 Type: BI

Solve.

40)  $|a - 8| = |a - 9|$

40) \_\_\_\_\_

A)  $\{17\}$

B)  $\left\{\frac{17}{2}\right\}$

C)  $\emptyset$

D)  $\left\{-\frac{2}{17}\right\}$

Answer: B

Diff: 0 Type: BI

Simplify.

41)  $\left| \frac{x}{2} \right|$

41) \_\_\_\_\_

A)  $\frac{|x|}{2}$

B)  $\frac{x}{2}$

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

D)  $\frac{|x|}{-2}$

Answer: A

Diff: 0 Type: BI

42)  $|13.1z|$

42) \_\_\_\_\_

A)  $-13.1z$

B)  $-13.1|z|$

C)  $13.1z$

D)  $13.1|z|$

Answer: D

Diff: 0 Type: BI

Find the distance between the points on a number line.

43)  $\frac{2}{7}, \frac{1}{5}$

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

A)  $\frac{17}{35}$

B)  $\frac{35}{3}$

C)  $\frac{3}{35}$

D)  $\frac{35}{17}$

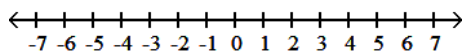
Answer: C

Diff: 0 Type: BI

Graph and write interval notation.

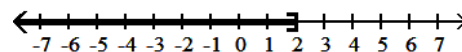
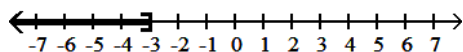
44)  $x \geq 2$  and  $x \geq -3$

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



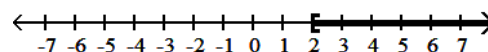
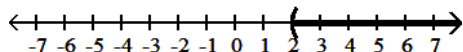
A)  $(-\infty, -3]$

B)  $(-\infty, 2]$



C)  $(2, \infty)$

D)  $[2, \infty)$



Answer: D

Diff: 0 Type: BI

Solve.

45)  $|7x - 2| = 5$

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

A)  $\left\{ -\frac{3}{7}, 1 \right\}$

B)  $\{ -6, -1 \}$

C)  $\{ 1, 6 \}$

D)  $\left\{ -1, \frac{3}{7} \right\}$

Answer: A

Diff: 0 Type: BI

Simplify.

46)  $|-9x|$

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

A)  $-9x$

B)  $|9|x|$

C)  $9x$

D)  $9|x|$

Answer: D

Diff: 0 Type: BI

Solve.

47)  $|3x - 5| + 1 = 4$

A)  $\left\{\frac{8}{3}\right\}$

B)  $\left\{-\frac{2}{3}, \frac{8}{3}\right\}$

C)  $\left\{\frac{2}{3}, -\frac{8}{3}\right\}$

D)  $\left\{\frac{2}{3}, \frac{8}{3}\right\}$

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

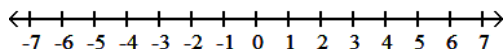
Answer: D

Diff: 0 Type: BI

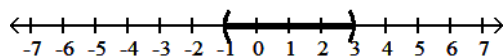
Graph and write interval notation.

48)  $-1 \leq x \leq 3$

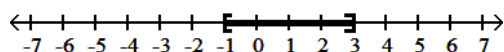
48) \_\_\_\_\_



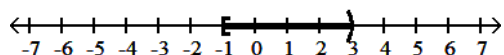
A)  $(-1, 3)$



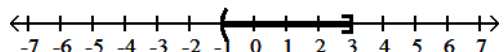
B)  $[-1, 3]$



C)  $[-1, 3)$



D)  $(-1, 3]$



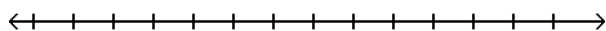
Answer: B

Diff: 0 Type: BI

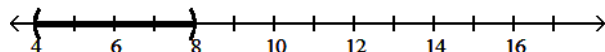
Solve the compound inequality. Express the solution using interval notation. Graph the solution set.

49)  $x \leq 4$  or  $x \geq 8$

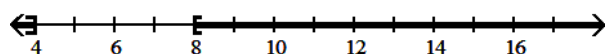
49) \_\_\_\_\_



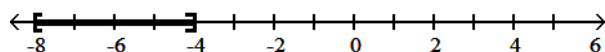
A)  $(4, 8)$



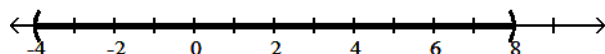
B)  $(-\infty, 4] \cup [8, \infty)$



C)  $[-8, -4]$



D)  $(-4, 8)$



Answer: B

Diff: 0 Type: BI



Solve.

50)  $|x - 1| = 8$

A)  $\{9\}$

B)  $\{-9, 7\}$

C)  $\{9, -7\}$

D)  $\emptyset$

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

Answer: C

Diff: 0 Type: BI

Find the distance between the points on a number line.

51) 13, -17

A) 30

B) 4

C) -4

D) -30

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

Answer: A

Diff: 0 Type: BI

Solve.

52) Body mass index is given by the formula  $I = \frac{704.5W}{H^2}$ . Mary's height is 62 in. What weights  $W$  will

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

allow Mary to keep her body mass index  $I$  between 18.5 and 25?

A)  $\{W | 1.6 \text{ lb} < W < 2.2 \text{ lb}\}$

B)  $\{W | 92.3 \text{ lb} < W < 123 \text{ lb}\}$

C)  $\{W | 100.9 \text{ lb} < W < 136.4 \text{ lb}\}$

D)  $\{W | 119.2 \text{ lb} < W < 142.2 \text{ lb}\}$

Answer: C

Diff: 0 Type: BI

53)  $|7x + 2| = 3$

A)  $\left\{\frac{1}{7}, -\frac{5}{7}\right\}$

B)  $\left\{-\frac{1}{7}, \frac{5}{7}\right\}$

C)  $\emptyset$

D)  $\left\{\frac{1}{2}, -\frac{5}{2}\right\}$

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

Answer: A

Diff: 0 Type: BI

54)  $|x| = 6$

A)  $\{6, -6\}$

B)  $\{-6\}$

C)  $\{6\}$

D)  $\{36\}$

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

Answer: A

Diff: 0 Type: BI

Find the indicated intersection or union.

55)  $\{v, w, x, y, z\} \cup \{q, s, y, z\}$

A)  $\{q, s, v, w, x, y, z\}$

B)  $\{q, s, u, v, w, x, y\}$

C)  $\{s, u, w\}$

D)  $\{s, u, v, w, x, z\}$

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

Answer: A

Diff: 0 Type: BI

56)  $\{q, s, u, v, w, x, y, z\} \cup \{q, s, y, z\}$

A)  $\{q, s, u, v, w, x, y, z\}$

B)  $\{s, u, v, w, x, z\}$

C)  $\{s, u, w\}$

D)  $\{v, x\}$

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

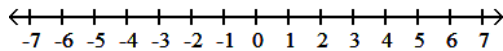
Answer: A

Diff: 0 Type: BI

Graph and write interval notation.

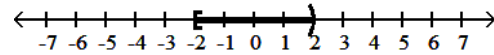
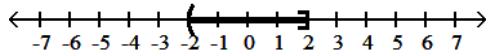
57)  $x \leq 2$  and  $x \geq -2$

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



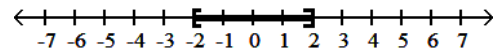
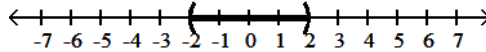
A)  $(-2, 2]$

B)  $[-2, 2)$



C)  $(-2, 2)$

D)  $[-2, 2]$



Answer: D

Diff: 0 Type: BI

Find the indicated intersection or union.

58)  $\{2, 8, 10, 17\} \cup \{8, 17, 24, 27\}$

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

A)  $\{2, 8, 10, 17, 24, 27\}$

B)  $\{8, 17\}$

C)  $\{2, 8, 17, 24\}$

D)  $\{8, 17, 24\}$

Answer: A

Diff: 0 Type: BI

Solve.

59)  $|x| = -4$

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

A)  $\emptyset$

B)  $\{-4\}$

C)  $\{4\}$

D)  $\{4, -4\}$

Answer: A

Diff: 0 Type: BI

60) The equation  $y = 0.005x - 0.30$  can be used to determine the profit  $y$ , in dollars, of producing  $x$  items. How many items  $x$  must be produced so the profit will be at least \$1208?

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

A)  $\{x \mid 0 < x \leq 241,659\}$

B)  $\{x \mid x \geq 241,660\}$

C)  $\{x \mid x \geq 240,660\}$

D)  $\{x \mid x \geq 241,540\}$

Answer: B

Diff: 0 Type: BI

61) Using the formula to find Fahrenheit (F) in terms of Celsius (C),  $F = \left(\frac{9}{5}\right)C + 32$ , find the range (to the nearest tenth) of the Fahrenheit temperature when the range of the Celsius temperature is between  $2^\circ\text{C}$  and  $8^\circ\text{C}$ , inclusive.

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

A) Between  $19.6^\circ\text{F}$  and  $30.4^\circ\text{F}$ , inclusive

B) Between  $33.1^\circ\text{F}$  and  $32.8^\circ\text{F}$ , inclusive

C) Between  $35.6^\circ\text{F}$  and  $46.4^\circ\text{F}$ , inclusive

D) Between  $3.6^\circ\text{F}$  and  $14.4^\circ\text{F}$ , inclusive

Answer: C

Diff: 0 Type: BI

62)  $|2x - 9| = -4$

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

A)  $\left\{-\frac{13}{2}, -\frac{5}{2}\right\}$

B)  $\left\{-\frac{2}{9}, \frac{2}{3}\right\}$

C)  $\left\{\frac{5}{2}, \frac{13}{2}\right\}$

D)  $\emptyset$

Answer: D

Diff: 0 Type: BI

63)  $\frac{7x - 12}{4} < -19$  or  $\frac{7x - 12}{4} \geq -4$

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

A)  $\left[-\frac{64}{7}, -\frac{4}{7}\right)$

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

C)  $\left[-\infty, -\frac{64}{7}\right) \cup [4, \infty)$

D)  $\left[-\infty, -\frac{64}{7}\right) \cup \left[-\frac{4}{7}, \infty\right)$

Answer: D

Diff: 0 Type: BI

64) Jon has 933 points in his math class. He must have 76% of the 1400 points possible by the end of the term to receive credit for the class. What is the minimum number of additional points he must earn by the end of the term to receive credit for the class?

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

A) 131 points

B) 709 points

C) 1064 points

D) 467 points

Answer: A

Diff: 0 Type: BI

65)  $-31 \leq -5z + 4 \leq -6$

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

A)  $[-7, -2]$

B)  $[2, 7]$

C)  $(2, 7)$

D)  $(-7, -2)$

Answer: B

Diff: 0 Type: BI

Find the indicated intersection or union.

66)  $\{q, s, u, v, w, x, y, z\} \cap \{s\}$

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

A)  $\{v, x\}$

B)  $\{s, u, w\}$

C)  $\{s\}$

D)  $\{q, s, u, v, w, x, y\}$

Answer: C

Diff: 0 Type: BI

Simplify.

67)  $\left|\frac{14y}{7y^2}\right|$

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

A)  $\frac{2}{|y|}$

B)  $\frac{2|y|}{|y^2|}$

C)  $\frac{2|y|}{y^2}$

D)  $\frac{2}{y}$

Answer: A

Diff: 0 Type: BI

Solve.

68)  $|4x| = 0$

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

A)  $\{-4, 0\}$

B)  $\{-4, 4\}$

C)  $\{0\}$

D)  $\{0, 4\}$

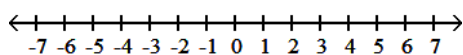
Answer: C

Diff: 0 Type: BI

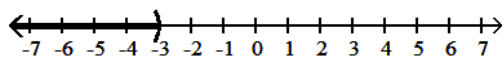
Solve and graph.

69)  $7x - 8 < -29$  and  $-8 - 9x > 1$

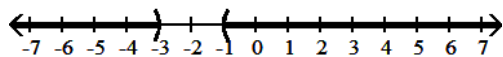
69) \_\_\_\_\_



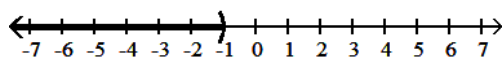
A)  $(-\infty, -3)$



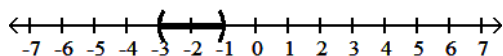
B)  $(-\infty, -3) \cup (-1, \infty)$



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



D)  $(-3, -1)$

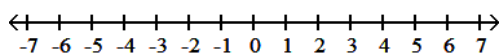


Answer: A

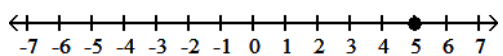
Diff: 0 Type: BI

70)  $x > 5$  or  $x < 5$

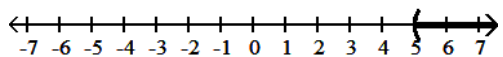
70) \_\_\_\_\_



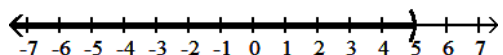
A)  $\{5\}$



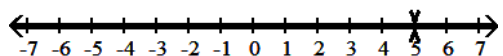
B)  $(5, \infty)$



C)  $(-\infty, 5)$



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



Answer: D

Diff: 0 Type: BI

Find the distance between the points on a number line.

71) 13.3, -14.1

A) 0.8

B) 0.4

C) 13.7

D) 27.4

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

Answer: D

Diff: 0 Type: BI

Solve.

72)  $-6 < \frac{7x - 20}{4} \leq -2$

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

A)  $\left[-\frac{4}{7}, \frac{12}{7}\right]$

B)  $\left[-\frac{4}{7}, \frac{12}{7}\right)$

C)  $\left[-\frac{4}{7}, 4\right]$

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

Answer: A

Diff: 0 Type: BI

73)  $1 - 4x \geq 10$  or  $1 - 4x < 2$

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

A)  $\left[-\frac{9}{4}, \frac{1}{4}\right]$

B)  $\left(-\infty, -\frac{1}{4}\right] \cup \left[\frac{9}{4}, \infty\right)$

C)  $\left[-\frac{9}{4}, -\frac{1}{4}\right]$

D)  $\left(-\infty, -\frac{9}{4}\right] \cup \left[-\frac{1}{4}, \infty\right)$

Answer: D

Diff: 0 Type: BI

74)  $\left|\frac{2}{3} + 3x\right| = \frac{2}{7}$

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

A)  $\left\{-\frac{8}{63}\right\}$

B)  $\left\{\frac{20}{63}\right\}$

C)  $\left\{-\frac{20}{63}, -\frac{8}{63}\right\}$

D)  $\left\{\frac{8}{63}, \frac{20}{63}\right\}$

Answer: C

Diff: 0 Type: BI

75)  $-6 < \frac{6 - 7x}{9} \leq 5$

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

A)  $\left[-\frac{39}{7}, \frac{60}{7}\right]$

B)  $\left\{\frac{39}{7}, \frac{60}{7}\right\}$

C)  $\left[-\frac{39}{7}, \frac{60}{7}\right)$

D)  $\left[\frac{39}{7}, \frac{60}{7}\right)$

Answer: C

Diff: 0 Type: BI

76)  $3 \leq 2t - 1$  or  $9 \geq 2t - 1$

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

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

B)  $(-\infty, 2] \cup [5, \infty)$

C)  $[2, 5]$

D)  $[-5, -2]$

Answer: A

Diff: 0 Type: BI

Solve the absolute value inequality. Write the solution set using interval notation.

77)  $|b + 4| - 7 > 11$

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

A)  $(-\infty, -22) \cup (14, \infty)$

B)  $(-\infty, 0) \cup (22, \infty)$

C)  $(-22, 14)$

D)  $(-\infty, -22) \cup (0, \infty)$

Answer: A

Diff: 0 Type: BI

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

Provide an appropriate response..

78) True or False: This pair of equations is equivalent.

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

$$9x - 6 = 30 \text{ and } 7x + 3 = 31$$

Answer: True. Each has solution 4.

Diff: 0 Type: SA

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

Solve.

79)  $1 - 4x \geq 9$  or  $6x + 3 \geq -21$

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

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

B)  $[-4, \infty)$

C)  $[-2, \infty)$

D)  $[-4, -2]$

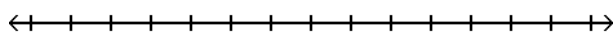
Answer: A

Diff: 0 Type: BI

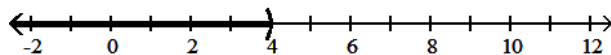
Solve the compound inequality. Express the solution using interval notation. Graph the solution set.

80)  $x > 4$  or  $x < 4$

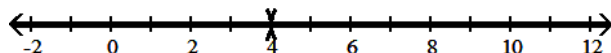
80) \_\_\_\_\_



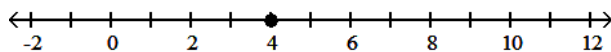
A)  $(-\infty, 4)$



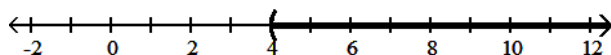
B)  $(-\infty, 4) \cup (4, \infty)$



C)  $(4, 4)$



D)  $(4, \infty)$



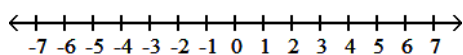
Answer: B

Diff: 0 Type: BI

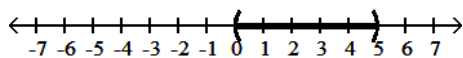
Graph and write interval notation.

81)  $x > 0$  and  $x < 5$

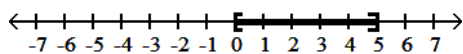
81) \_\_\_\_\_



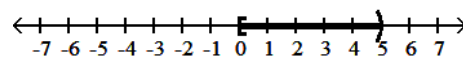
A)  $(0, 5)$



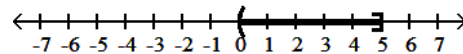
C)  $[0, 5]$



B)  $[0, 5)$



D)  $(0, 5]$



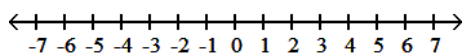
Answer: A

Diff: 0 Type: BI

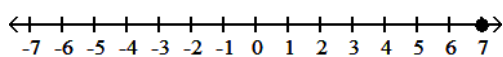
Solve and graph.

82)  $4x - 10 \leq 18$  and  $2x - 1 \geq 13$

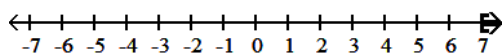
82) \_\_\_\_\_



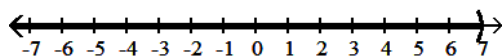
A)  $\{7\}$



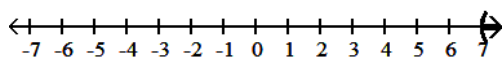
B)  $[7, \infty)$



C)  $(-\infty, 7)$



D)  $(7, \infty)$



Answer: A

Diff: 0 Type: BI

Solve.

83)  $-5c + 3 \leq -22$  or  $-5c + 3 > -7$

83) \_\_\_\_\_

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

B)  $(2, 5]$

C)  $(-\infty, 2) \cup [5, \infty)$

D)  $(-\infty, -5] \cup (-2, \infty)$

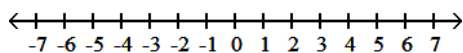
Answer: C

Diff: 0 Type: BI

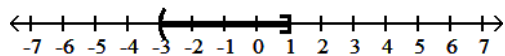
Solve and graph.

84)  $-28 \leq 7x - 7$  and  $5x + 8 < 13$

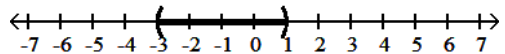
84) \_\_\_\_\_



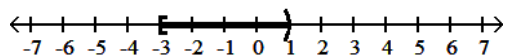
A)  $(-3, 1]$



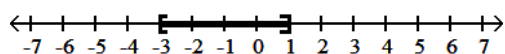
B)  $(-3, 1)$



C)  $[-3, 1)$



D)  $[-3, 1]$



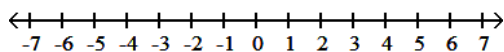
Answer: C

Diff: 0 Type: BI

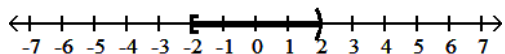
Graph and write interval notation.

85)  $-2 < x < 2$

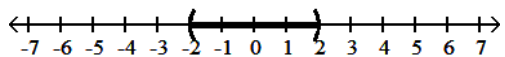
85) \_\_\_\_\_



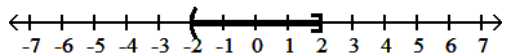
A)  $[-2, 2)$



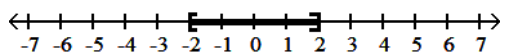
B)  $(-2, 2)$



C)  $(-2, 2]$



D)  $[-2, 2]$



Answer: B

Diff: 0 Type: BI



Solve.

$$86) \frac{5x-1}{9} < -\frac{1}{3} \text{ or } \frac{5x-1}{9} \geq \frac{1}{3}$$

86) \_\_\_\_\_

$$A) \left(-\infty, -\frac{2}{5}\right) \cup \left[\frac{4}{5}, \infty\right)$$

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

$$C) \left[-\frac{2}{5}, \frac{4}{5}\right]$$

$$D) \left[-\frac{8}{15}, \frac{2}{3}\right)$$

Answer: A

Diff: 0 Type: BI

$$87) 5 \geq -x > -6$$

87) \_\_\_\_\_

$$A) [-5, 6)$$

$$B) [5, 6)$$

$$C) (-5, 6]$$

$$D) (-6, 5]$$

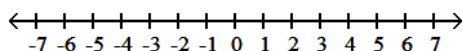
Answer: A

Diff: 0 Type: BI

Solve and graph.

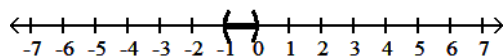
$$88) 4x > 4 \text{ and } x + 5 < 5$$

88) \_\_\_\_\_

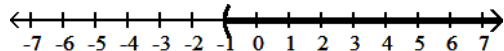


$$A) \emptyset$$

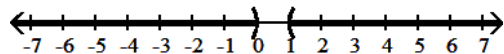
$$B) (-1, 0)$$



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



$$D) (0, 1)$$



Answer: A

Diff: 0 Type: BI

Solve.

$$89) |t - 7| = 0$$

89) \_\_\_\_\_

$$A) \{7, -7\}$$

$$B) \emptyset$$

$$C) \{7\}$$

$$D) \{-7\}$$

Answer: C

Diff: 0 Type: BI

90) In order for a chemical reaction to remain stable, its Celsius temperature C must be no more than 129.13° C. At what Farenheit temperatures F will the reaction remain stable.  $\left(F = \frac{9}{5}C + 32\right)$

90) \_\_\_\_\_

$$A) \{F \mid F \leq 53.96^\circ\}$$

$$B) \{F \mid F \leq 264.43^\circ\}$$

$$C) \{F \mid F \geq 264.43^\circ\}$$

$$D) \{F \mid F \geq 53.96^\circ\}$$

Answer: B

Diff: 0 Type: BI

Find the distance between the points on a number line.

91) -15, -4

A) 19

B) -11

C) -19

D) 11

91) \_\_\_\_\_

Answer: D

Diff: 0 Type: BI

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

Provide an appropriate response..

92) Give a definition or an example of the word or phrase. Closed interval linear inequality

92) \_\_\_\_\_

Answer: An inequality such as  $a \leq x \leq b$

Diff: 0 Type: SA

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

Solve.

93)  $7x + 8 \leq -6$  or  $9x - 1 \geq -10$

A)  $[-2, -1]$

B)  $(-\infty, -2] \cup [-1, \infty)$

C)  $[-1, \infty)$

D)  $[-2, \infty)$

93) \_\_\_\_\_

Answer: B

Diff: 0 Type: BI

94)  $|m - 1| = |2 - m|$

A)  $\left\{\frac{3}{2}\right\}$

B)  $\left\{-\frac{2}{3}\right\}$

C)  $\emptyset$

D)  $\{3\}$

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

Answer: A

Diff: 0 Type: BI

Find the indicated intersection or union.

95)  $\{q, s, u, v, w, x, y, z\} \cap \{q, s, y, z\}$

A)  $\{v, x\}$

B)  $\{s, u, v, w, x, z\}$

C)  $\{q, s, y, z\}$

D)  $\{q, s, u, v, w, y\}$

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

Answer: C

Diff: 0 Type: BI

Solve.

96)  $8 \leq 2t + 4 \leq 20$

A)  $[2, 8]$

B)  $(2, 8)$

C)  $(-8, -2)$

D)  $[-8, -2]$

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

Answer: A

Diff: 0 Type: BI

Solve the absolute value inequality. Write the solution set using interval notation.

97)  $|x| > 1$

A)  $(-1, \infty)$

B)  $(1, \infty)$

C)  $(-1, 1)$

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

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

Answer: D

Diff: 0 Type: BI

Solve.

98)  $|2x - 12| = 2$

A)  $\{5, 7\}$

B)  $\{-7, -5\}$

C)  $\{-7, 5\}$

D)  $\{7\}$

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

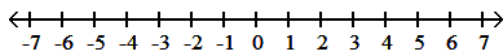
Answer: A

Diff: 0 Type: BI

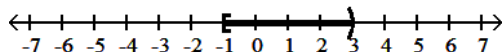
Graph and write interval notation.

99)  $-1 \leq x < 3$

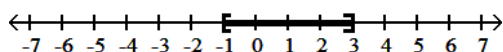
99) \_\_\_\_\_



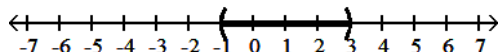
A)  $[-1, 3)$



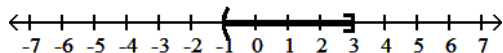
B)  $[-1, 3]$



C)  $(-1, 3)$



D)  $(-1, 3]$



Answer: A

Diff: 0 Type: BI

Solve the absolute value inequality. Write the solution set using interval notation.

100)  $|8x + 3| < 16$

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

A)  $\left(-\frac{19}{8}, \frac{13}{8}\right)$

B)  $\left(-\infty, -\frac{19}{8}\right)$

C)  $\left(-\infty, -\frac{19}{8}\right) \cup \left(\frac{13}{8}, \infty\right)$

D)  $(-\infty, 8)$

Answer: A

Diff: 0 Type: BI

101)  $4|x + 2| \geq 4$

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

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

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

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

D)  $(-1, -3)$

Answer: C

Diff: 0 Type: BI

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

Provide an appropriate response..

102) Which one of these is not a linear equation?

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

- a)  $6y^2 - 3y + 1 = 0$       b)  $0.07x - 0.09x = 0.57$   
c)  $5t - 11t = -6t$       d)  $7x + 9(x - 2) = -5x$

Answer: (a) is not a linear equation.

Diff: 0    Type: SA

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

Solve.

103) Assume that the mathematical model  $C(x) = 14x + 120$  represents the cost  $C$ , in hundreds of dollars,      103) \_\_\_\_\_

for a certain manufacturer to produce  $x$  items. How many items  $x$  can be manufactured while keeping costs between between \$404,000 and \$600,000?

- A)  $\{x \mid 300 < x < 450\}$       B)  $\{x \mid 420 < x < 560\}$   
C)  $\{x \mid 450 < x < 600\}$       D)  $\{x \mid 280 < x < 420\}$

Answer: D

Diff: 0    Type: BI

Provide an appropriate response..

104) Which two of the following equations do not correctly state the relationship between distance, rate and time?      104) \_\_\_\_\_

(a)  $\frac{d}{t} = r$       (b)  $dr = t$

(c)  $\frac{r}{t} = d$       (d)  $\frac{d}{r} = t$

- A) (a) & (c)      B) (b) & (d)      C) (b) & (c)      D) (a) & (d)

Answer: C

Diff: 0    Type: BI

Solve the absolute value inequality. Write the solution set using interval notation.

105)  $|r + 7.9| < 8$

105) \_\_\_\_\_

- A)  $(-0.1, 15.9)$       B)  $(-\infty, -15.9) \cup (0.1, \infty)$   
C)  $(-\infty, -0.1) \cup (15.9, \infty)$       D)  $(-15.9, 0.1)$

Answer: D

Diff: 0    Type: BI

Solve.

106) Photography reprints cost \$0.52 each at a local photo shop. Through the mail, they cost \$0.44 each      106) \_\_\_\_\_

plus \$1.20 postage and handling. How many reprints must a customer purchase to make it less expensive to use mail order?

- A)  $\{n \mid n > 19 \text{ reprints}\}$       B)  $\{n \mid n > 18 \text{ reprints}\}$   
C)  $\{n \mid n > 16 \text{ reprints}\}$       D)  $\{n \mid n > 15 \text{ reprints}\}$

Answer: D

Diff: 0    Type: BI

107) A salesperson has two job offers. Company A offers a weekly salary of \$300 plus commission of 12% of sales. Company B offers a weekly salary of \$600 plus commission of 6% of sales. What is the amount of sales above which Company A's offer is the better of the two?

107) \_\_\_\_\_

- A) \$2500                      B) \$5000                      C) \$10,000                      D) \$5100

Answer: B

Diff: 0    Type: BI

108)  $|5x| + 4 = 10$

108) \_\_\_\_\_

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

Answer: A

Diff: 0    Type: BI

Solve the absolute value inequality. Write the solution set using interval notation.

109)  $|7x - 6| \geq 2$

109) \_\_\_\_\_

- A)  $\left[-\infty, -\frac{8}{7}\right] \cup [2, \infty)$                       B)  $\left[\frac{8}{7}, \infty\right)$   
C)  $\left[\frac{4}{7}, \frac{8}{7}\right]$                       D)  $\left[-\infty, \frac{4}{7}\right] \cup \left[\frac{8}{7}, \infty\right)$

Answer: D

Diff: 0    Type: BI

Solve.

110)  $|x| + 4 = 15$

110) \_\_\_\_\_

- A)  $\{11\}$                       B)  $\{-15, 15\}$                       C)  $\{-15\}$                       D)  $\{-11, 11\}$

Answer: D

Diff: 0    Type: BI

Solve the absolute value inequality. Write the solution set using interval notation.

111)  $\left|\frac{x-1}{2}\right| \geq 7$

111) \_\_\_\_\_

- A)  $[-13, 15]$                       B)  $(-13, 15)$   
C)  $(-\infty, -13] \cup [15, \infty)$                       D)  $(-\infty, -13] \cup [15, \infty)$

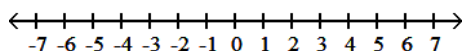
Answer: D

Diff: 0    Type: BI

Graph and write interval notation.

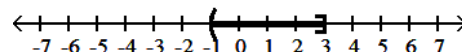
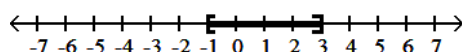
112)  $x < 3$  and  $x > -1$

112) \_\_\_\_\_



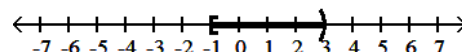
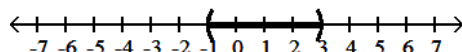
- A)  $[-1, 3]$

- B)  $(-1, 3]$



- C)  $(-1, 3)$

- D)  $[-1, 3)$



Answer: C

Diff: 0    Type: BI

Solve.

113)  $15 < 5x \leq 30$

A)  $(-3, -6]$

B)  $[-3, -6)$

C)  $(3, 6]$

D)  $[3, 6)$

113) \_\_\_\_\_

Answer: C

Diff: 0 Type: BI

Solve the absolute value inequality. Write the solution set using interval notation.

114)  $3|x + 8| < 3$

A)  $(7, 9)$

B)  $(-\infty, 7) \cup (9, \infty)$

C)  $(-\infty, -9) \cup (-7, \infty)$

D)  $(-9, -7)$

114) \_\_\_\_\_

Answer: D

Diff: 0 Type: BI

Solve.

115)  $\frac{9}{2}x - 3 \leq 6$  or  $\frac{9}{2}x - 3 > 15$

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

B)  $(-\infty, 2] \cup (4, \infty)$

C)  $[2, 4)$

D)  $(-\infty, -2] \cup (4, \infty)$

115) \_\_\_\_\_

Answer: B

Diff: 0 Type: BI

116)  $|7x| = 3$

A)  $\left\{-\frac{3}{7}, \frac{3}{7}\right\}$

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

C)  $\left\{\frac{3}{7}\right\}$

D)  $\left\{-\frac{7}{3}, \frac{7}{3}\right\}$

116) \_\_\_\_\_

Answer: A

Diff: 0 Type: BI

117)  $\left|\frac{5x+2}{3}\right| = 3$

A)  $\left\{\frac{7}{5}, -\frac{11}{5}\right\}$

B)  $\left\{\frac{11}{5}\right\}$

C)  $\emptyset$

D)  $\left\{-\frac{7}{5}\right\}$

117) \_\_\_\_\_

Answer: A

Diff: 0 Type: BI

118)  $4|x+1| - 1 = 2$

A)  $\left\{-\frac{1}{4}, \frac{3}{4}\right\}$

B)  $\left\{-\frac{1}{4}\right\}$

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

D)  $\left\{-\frac{1}{4}, -\frac{7}{4}\right\}$

118) \_\_\_\_\_

Answer: D

Diff: 0 Type: BI

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

Provide an appropriate response..

119) The three-part inequality  $a < x \leq b$  means "a is less than x and x is less than or equal to b". 119) \_\_\_\_\_  
Which of these inequalities is not satisfied by any real number x?

- (a)  $-5 < x \leq -11$
- (b)  $-8 < x \leq -7$
- (c)  $0 < x \leq 4$
- (d)  $-2 < x \leq 6$

Answer: Choice (a).

Diff: 0 Type: SA

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

Solve.

120)  $-\frac{1}{3} < \frac{1}{12}x - 5 \leq \frac{1}{3}$  120) \_\_\_\_\_

A)  $[1, -1]$

B)  $(1, 9]$

C)  $(-64, -56]$

D)  $(56, 64]$

Answer: D

Diff: 0 Type: BI

121)  $\frac{2 - 10x}{10} < -4$  or  $\frac{2 - 10x}{10} \geq 2$  121) \_\_\_\_\_

A)  $\left[-\frac{9}{5}, \frac{21}{5}\right]$

B)  $\left(-\infty, -\frac{9}{5}\right) \cup \left(\frac{21}{5}, \infty\right)$

C)  $\left(-\infty, -\frac{9}{5}\right] \cup \left[\frac{21}{5}, \infty\right)$

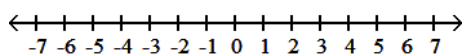
D)  $(-\infty, \infty)$

Answer: C

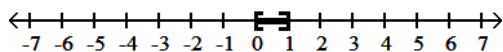
Diff: 0 Type: BI

Solve and graph.

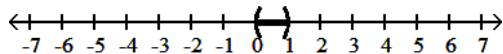
122)  $5x - 1 < 4$  and  $x - 2 > -1$  122) \_\_\_\_\_



A)  $[0, 1]$

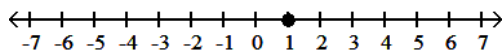


B)  $(0, 1)$



C)  $\emptyset$

D)  $\{1\}$



Answer: C

Diff: 0 Type: BI

Solve.

123)  $|5x - 2| = |4x - 11|$

123) \_\_\_\_\_

A)  $\{-13, 1\}$

B)  $\{-1, 13\}$

C)  $\left\{-9, \frac{13}{9}\right\}$

D)  $\{13, 1\}$

Answer: C

Diff: 0 Type: BI

124) Suppose that the sales of a particular brand of appliance satisfy the relationship  $S(x) = 120x + 1100$ , where  $S(x)$  represents the number of sales in year  $x$ , with  $x = 0$  corresponding to 1990. For what years will sales be between 1580 and 2060? 124) \_\_\_\_\_

A) Between 5 and 9

B) Between 1993 and 1997

C) Between 1994 and 1998

D) Between 1994 and 1997

Answer: C

Diff: 0 Type: BI

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

Provide an appropriate response..

125) Under what conditions must the inequality symbol be reversed when solving an inequality?

125) \_\_\_\_\_

Answer: When multiplying or dividing by a negative number.

Diff: 0 Type: SA



## Answer Key

Testname: CH1\_P2

- 1) C
- 2) B
- 3) B
- 4) A
- 5) A
- 6) C
- 7) B
- 8) B
- 9) A
- 10) B
- 11) D
- 12) D
- 13) A
- 14) B
- 15) A
- 16) A
- 17) B
- 18) A
- 19) D
- 20) B
- 21) D
- 22) C
- 23) C
- 24) C
- 25) B
- 26) C
- 27) C
- 28) False. It has no solution.
- 29) A
- 30) C
- 31) D
- 32) B
- 33) B
- 34) D
- 35) A
- 36) D
- 37) A
- 38) C
- 39) C
- 40) B
- 41) A
- 42) D
- 43) C
- 44) D
- 45) A
- 46) D
- 47) D
- 48) B
- 49) B
- 50) C

## Answer Key

Testname: CH1\_P2

- 51) A
- 52) C
- 53) A
- 54) A
- 55) A
- 56) A
- 57) D
- 58) A
- 59) A
- 60) B
- 61) C
- 62) D
- 63) D
- 64) A
- 65) B
- 66) C
- 67) A
- 68) C
- 69) A
- 70) D
- 71) D
- 72) A
- 73) D
- 74) C
- 75) C
- 76) A
- 77) A
- 78) True. Each has solution 4.
- 79) A
- 80) B
- 81) A
- 82) A
- 83) C
- 84) C
- 85) B
- 86) A
- 87) A
- 88) A
- 89) C
- 90) B
- 91) D
- 92) An inequality such as  $a \leq x \leq b$
- 93) B
- 94) A
- 95) C
- 96) A
- 97) D
- 98) A
- 99) A
- 100) A

## Answer Key

Testname: CH1\_P2

- 101) C
- 102) (a) is not a linear equation.
- 103) D
- 104) C
- 105) D
- 106) D
- 107) B
- 108) A
- 109) D
- 110) D
- 111) D
- 112) C
- 113) C
- 114) D
- 115) B
- 116) A
- 117) A
- 118) D
- 119) Choice (a).
- 120) D
- 121) C
- 122) C
- 123) C
- 124) C
- 125) When multiplying or dividing by a negative number.