

TEST BANK



Intermediate

Algebra



Lial · Hornsby · McGinnis

11th Edition

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

Decide if the statement is true or false.

- 1) 16 is a solution of $-8x = -128$. 1) _____
A) True B) False
- 2) -16 is a solution of $3x = -44$. 2) _____
A) True B) False
- 3) -6 is a solution of $-6x - 3 = 33$. 3) _____
A) True B) False
- 4) -11 is a solution of $-4x + 7 = 53$. 4) _____
A) True B) False
- 5) -4 is a solution of $-5x + 5x = 0$. 5) _____
A) True B) False
- 6) 5 is a solution of $-6x - 9x = 16$. 6) _____
A) True B) False
- 7) -2 is a solution of $9x + 2x = 10x$. 7) _____
A) True B) False

Decide whether the following is an expression or an equation.

- 8) $9x + 1 + 6x + 4$ 8) _____
A) Expression B) Equation
- 9) $3x - (2x - 1) = 2$ 9) _____
A) Equation B) Expression
- 10) $9(5x + 3) = 8(9x - 6)$ 10) _____
A) Equation B) Expression
- 11) $5(8x + 5) - 7(2x - 7)$ 11) _____
A) Expression B) Equation
- 12) $-9x + 5 - 3x + 10 = 0$ 12) _____
A) Expression B) Equation
- 13) $3(2x - 2) = 5(x + 4)$ 13) _____
A) Expression B) Equation
- 14) $-4(x - 9) - 3(x + 8) - 10x$ 14) _____
A) Expression B) Equation

Solve the equation.

- 15) $14x - 7 = 11$ 15) _____
A) $\left\{ \frac{2}{7} \right\}$ B) $\left\{ -\frac{9}{7} \right\}$ C) $\left\{ \frac{17}{14} \right\}$ D) $\left\{ \frac{9}{7} \right\}$
- 16) $3s + 8 = -9s$ 16) _____

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

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

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

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

17) $23t - 16 = 15t - 10$

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

B) $\left\{\frac{3}{4}\right\}$

C) $\left\{-\frac{23}{26}\right\}$

D) $\left\{-\frac{19}{6}\right\}$

17) _____

18) $5(x + 5) = (5x + 25)$

A) $\{0\}$

C) $\{50\}$

B) \emptyset

D) $\{\text{All real numbers}\}$

18) _____

19) $(y - 7) - (y + 7) = 9y$

A) $\left\{-\frac{2}{9}\right\}$

B) $\{-2\}$

C) $\left\{-\frac{14}{9}\right\}$

D) $\left\{-\frac{14}{5}\right\}$

19) _____

20) $12(6c - 2) = 5c - 8$

A) $\left\{\frac{16}{77}\right\}$

B) $\left\{\frac{16}{67}\right\}$

C) $\left\{\frac{32}{67}\right\}$

D) $\left\{-\frac{16}{67}\right\}$

20) _____

21) $4(y + 7) = 5(y - 3)$

A) $\{13\}$

B) $\{-13\}$

C) $\{-43\}$

D) $\{43\}$

21) _____

22) $3m + 7 + 5(2m - 3) = 3(m + 3)$

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

B) $\left\{\frac{17}{16}\right\}$

C) $\left\{\frac{31}{10}\right\}$

D) $\left\{\frac{17}{10}\right\}$

22) _____

23) $-6x + 5(-2x - 5) = -32 - 9x$

A) $\{1\}$

B) $\{-1\}$

C) $\left\{\frac{57}{25}\right\}$

D) $\left\{\frac{57}{7}\right\}$

23) _____

24) $-[8x + (2x + 7)] = 1 - (9x + 3)$

A) $\{-1\}$

B) $\left\{\frac{5}{3}\right\}$

C) $\{-5\}$

D) $\{3\}$

24) _____

Decide whether the equation is conditional, an identity, or a contradiction. Give the solution set.

25) $16m + 6 = 2(5m + 21)$

A) Contradiction; \emptyset

C) Identity; $\{\text{all real numbers}\}$

B) Conditional; $\{6\}$

D) Conditional; $\{-8\}$

25) _____

26) $3(27t + 6) = 9(5t - 2)$

A) Conditional; $\{-0\}$

C) Identity; $\{\text{all real numbers}\}$

B) Conditional; $\{-1\}$

D) Contradiction; \emptyset

26) _____

27) $5(2f - 31) = 10f - 155$

A) Identity; $\{\text{all real numbers}\}$

C) Contradiction; \emptyset

B) Conditional; $\{0\}$

D) Identity; \emptyset

27) _____

28) $2(3g + 34) - 6g - 68 = 0$

A) Conditional; $\{3\}$

C) Contradiction; \emptyset

B) Conditional; $\{0\}$

D) Identity; $\{\text{all real numbers}\}$

28) _____

29) $20k + 3 = 5(4k - 1)$

29) _____

- A) Conditional; {-4}
C) Identity; {all real numbers}

- B) Conditional; {4}
D) Contradiction; \emptyset

30) $-6s - 1 + 3(2s + 1) = 0$

- A) Contradiction; \emptyset
C) Identity; {all real numbers}

- B) Conditional; {2}
D) Conditional; {1}

30) _____

31) $3x + 8(x + 1) + 3 = 11 - 6x$

- A) Contradiction; \emptyset
C) Conditional; {1}

- B) Conditional; {0}
D) Identity; {all real numbers}

31) _____

32) $2[3 - (5 - 5r)] - r = -10 + 3(2 + 3r)$

- A) Conditional; {10}
C) Identity; {all real numbers}

- B) Conditional; {-5}
D) Contradiction; \emptyset

32) _____

Solve the equation.

33) $\frac{f}{4} - 5 = 1$

- A) {16} B) {-24}

- C) {24} D) {-16}

33) _____

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

- A) {-60} B) {-120}

- C) {120} D) {60}

34) _____

35) $\frac{p}{4} - \frac{3p}{8} = 3$

- A) {-24} B) {24}

- C) {21} D) {-21}

35) _____

36) $\frac{r+6}{3} = \frac{r+8}{6}$

- A) {-4} B) {3}

- C) {4} D) {-12}

36) _____

37) $\frac{a}{5} - \frac{1}{5} = -6$

- A) {-29} B) {31}

- C) {29} D) {-31}

37) _____

38) $\frac{y}{6} - 4 = 4$

- A) {48} B) {-50}

- C) {50} D) {-48}

38) _____

39) $\frac{b}{4} - 10 = -5$

- A) {22} B) {20}

- C) {-20} D) {-22}

39) _____

40) $\frac{3x+8}{5} + \frac{7}{5} = -\frac{7x}{4}$

- A) $\left\{\frac{4}{47}\right\}$ B) $\left\{\frac{60}{23}\right\}$

- C) $\left\{-\frac{60}{47}\right\}$ D) $\left\{-\frac{4}{47}\right\}$

40) _____

41) $0.01x + 0.1(x + 20,000) = 2220$

41) _____

A) {20,000}

B) {200}

C) {2000}

D) {200,000}

42) $-0.08y + 0.13(9000 - y) = 0.29y$

A) {5850}

B) {7020}

C) {2340}

D) {585}

42) _____

43) $-0.5(30,000) + 0.15p = 0.02(30,000 + p)$

A) {20,280}

B) {1,200,000}

C) {120,000}

D) {2028}

43) _____

Provide an appropriate response.

44) $2x - 5 = 5 + 7x - 3$

Is this a linear equation?

A) Yes

B) No

44) _____

45) $\frac{3}{x}$

$= 83$

Is this a linear equation?

A) No

B) Yes

45) _____

46) $5x^2 - 7 = 3x$

Is this a linear equation?

A) No

B) Yes

46) _____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.47) If one step in the solution of an equation is $75 = -32$, what is the final solution of the equation?

47) _____

48) True or false? This pair of equations is equivalent. $4x - 7 = 5$ and $6x + 5 = 23$

48) _____

49) True or false? The solution set of the equation $7y - 6 = 7y + 3$ is $\{0\}$. Explain.

49) _____

50) True or false? The solution set of the equation $6(5s - 9) = 30s - 54$ is $\{1\}$. Explain.

50) _____

51) Find all values of s that make this statement true: $8(6s - 2) = 48s - 16$.

51) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.**Solve the equation for the specified variable. Use the distributive property to factor as necessary.**

52) $-8k + ar = r - 8y$ for r

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

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

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

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

52) _____

53) $5s + 5p = tp - 5$ for p

A) $p = \frac{5s + 5}{5}$ or $p = \frac{-5s - 5}{-5}$

C) $p = \frac{5 - t}{-5s - 5}$ or $p = \frac{t - 5}{5s + 5}$

B) $p = \frac{-5s - 5}{5 - t}$ or $p = \frac{5s + 5}{t - 5}$

D) $p = \frac{5s + 5}{-t}$ or $p = \frac{-5s - 5}{t}$

53) _____

54) $\frac{8y - x}{y}$

 $w =$ for y

54) _____

A) $y = \frac{x}{w-8}$ or $y = \frac{-x}{8-w}$
 C) $y = \frac{-x}{w-8}$ or $y = \frac{x}{8-w}$

B) $y = \frac{8-x}{w}$ or $y = \frac{x-8}{-w}$
 D) $y = \frac{w-8}{-x}$ or $y = \frac{8-w}{x}$

55) $c = \frac{3t+8}{t}$ for t

55) _____

A) $t = \frac{11}{c}$ or $t = \frac{-11}{-c}$
 C) $t = \frac{-8}{c-3}$ or $t = \frac{8}{-c+3}$

B) $t = \frac{c+3}{8}$ or $t = \frac{-c-3}{-8}$
 D) $t = \frac{8}{c-3}$ or $t = \frac{-8}{-c+3}$

Solve the equation for y.

56) $4x + 5y = 6$

56) _____

A) $y = \frac{-6-4x}{5}$ B) $y = -20x + 30$

C) $y = \frac{6-4x}{5}$ D) $y = \frac{6+4x}{5}$

57) $-5x + 7y = 3$

57) _____

A) $y = \frac{3-5x}{7}$ B) $y = \frac{-3-5x}{7}$

C) $y = 35x + 21$ D) $y = \frac{3+5x}{7}$

58) $6x - 7y = 2$

58) _____

A) $y = \frac{2-6x}{-7}$, or $y = \frac{6x-2}{7}$
 C) $y = \frac{-2-6x}{-7}$, or $y = \frac{6x+2}{7}$

B) $y = \frac{-2+6x}{-7}$, or $y = \frac{-6x+2}{7}$
 D) $y = \frac{2+6x}{-7}$, or $y = \frac{6x+2}{7}$

59) $-7x - 7y = 2$

59) _____

A) $y = \frac{2-7x}{-7}$, or $y = \frac{7x-2}{7}$
 C) $y = \frac{2+7x}{-7}$, or $y = \frac{-7x-2}{7}$

B) $y = \frac{-2+7x}{-7}$, or $y = \frac{2-7x}{7}$
 D) $y = \frac{-2-7x}{-7}$, or $y = \frac{7x+2}{7}$

Solve the problem.

60) Find the corresponding Celsius temperature for a temperature of 232°F. Round to the nearest tenth, if necessary.

60) _____

- A) 449.6°C B) 360°C C) 125.3°C D) 111.1°C

61) Find the corresponding Fahrenheit temperature for a temperature of 88°C. Round to the nearest tenth, if necessary.

61) _____

- A) 216°F B) 31.1°F C) 66.7°F D) 190.4°F

62) What is the perimeter of a rectangle of length 25 ft and width 10 ft?

62) _____

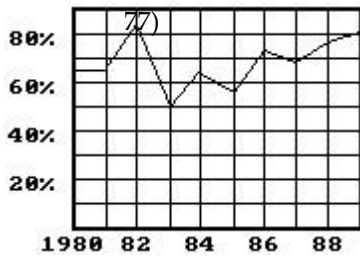
- A) 70 ft B) 60 ft C) 140 ft D) 35 ft

63) What is the area of a square with side 1.8 cm?

63) _____

- A) 3.24 cm² B) 3.6 cm² C) 5 cm² D) 12.96 cm²

- 64) Find the area of a triangle with height 6 m and base 12 m. 64) _____
 A) 144 m^2 B) 72 m^2 C) 9 m^2 D) 36 m^2
- 65) Find the surface area of a cylinder with a radius of 2 cm and a height of 40 cm. Use 3.14 for π . 65) _____
 A) 514.96 cm^2 B) 502.4 cm^2 C) 527.52 cm^2 D) 1507.2 cm^2
- 66) Jay drove 355 km at an average rate of 71 km/hr. How long did the trip take? 66) _____
 A) 6 hr B) $\frac{1}{5}$ hr C) 5 hr D) 4 hr
- 67) Janet drove 272 km, and the trip took 4 hr. At what average rate was Janet traveling? 67) _____
 A) $\frac{1}{68}$ km/hr B) 68 km/hr C) 69 km/hr D) 1088 km/hr
- 68) The area of a trapezoid is 57 square feet. If the bases are 5 ft and 14 ft, find the altitude of the trapezoid. 68) _____
 A) 12 ft B) 3 ft C) 6 ft D) 1.5 ft
- 69) A circle has a circumference of 44π m. Find the radius of the circle. 69) _____
 A) 22 m B) 7 m C) 11 m D) 44 m
- 70) Find the simple interest if \$3800 is borrowed at 14.9% for 6 months (0.5 yr). 70) _____
 A) \$283.10 B) \$1132.40 C) \$127.52 D) \$28,310.00
- 71) Find the simple interest if \$3300 is invested at 6.9% for 4 years. 71) _____
 A) \$227.70 B) \$1913.04 C) \$910.80 D) \$56.92
- 72) Find the total amount in an account if \$800 is invested at 17% simple interest for 1.5 years. 72) _____
 A) \$870.59 B) \$204.00 C) \$936.00 D) \$1004.00
- 73) Find the total amount that must be repaid if \$2800 is borrowed at 14.9% simple interest for 2 years. 73) _____
 A) \$3175.84 B) \$834.40 C) \$3634.40 D) \$3217.20
- 74) A chemical solution contains 7% salt. How much salt is in 2 ml of solution? Round your answer to three decimal places, if necessary. 74) _____
 A) 28.571 ml B) 0.14 ml C) 1.4 ml D) 2.857 ml
- 75) During one year, the Larsons' real estate bill included \$585 for local schools. Of this amount, \$245 went to the high school district. What percent did the Larsons pay to the high school district? Round your answer to two decimal places. 75) _____
 A) 41.88% B) 41.71% C) 58.12% D) 34.00%
- 76) A mixture of chlorine and water contains a total of 93 gallons of liquid. There are 64 gallons of pure chlorine in the mixture. (i) What percent of the mixture is water? (ii) What percent of the mixture is chlorine? Round your answer to the nearest percent, if necessary. 76) _____
 A) (i) 64% water; (ii) 36% chlorine B) (i) 69% water; (ii) 31% chlorine
 C) (i) 15% water; (ii) 85% chlorine D) (i) 31% water; (ii) 69% chlorine
- 77) The graph shows the percent of students at a local high school who were enrolled in a foreign language class each school year during the 1980s.

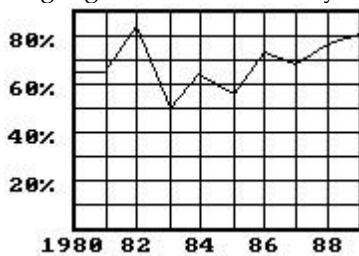


What is the best estimate for the number of students taking a language in 1986 if a total of 2970 students were enrolled in the school?

- A) 2118 students B) 2168 students C) 51 students D) 802 students

78) The graph shows the percent of students at a local high school who were enrolled in a foreign language class each school year during the 1980s.

78) _____



What is the best estimate for the number of students not taking a language in 1984 if a total of 3510 students were enrolled in the school?

- A) 2211 students B) 1299 students C) 5616 students D) 1249 students

79) When a loan scheduled to run n payments is paid off k payments ahead of schedule, the amount

79) _____

of unearned interest u is given by $u = f \cdot \frac{k(k+1)}{n(n+1)}$, where f is the total scheduled finance charge. The finance charge on a loan taken out by Ivan is \$632. If there were 18 equal monthly installments needed to repay the loan, and the loan is paid in full with 15 months remaining, find the amount of unearned interest. (Round your answer to the nearest cent.)

- A) \$12.39 B) \$433.73 C) \$443.51 D) \$22.18

80) When a loan scheduled to run n payments is paid off k payments ahead of schedule, the amount

findnce the charge tota paid. 1 (Round fina your

of unearned interest u is given by $u = f \cdot \frac{k(k+1)}{n(n+1)}$, where f is the total scheduled finance charge. The finance charge on a loan taken out by Ajay is \$679. If there were 24 equal monthly installments needed to repay the loan, and the loan is paid in full with 11 months remaining,

answer 80)
to the
nearest
cent.)

- A) \$149.38 B) \$205.96 C) \$529.62 D) \$679.00

81) $A = \frac{2400f}{b(p+1)}$ gives the approximate annual interest rate for a consumer loan paid off with monthly payments, where f is the finance charge on the loan, p is the number of payments, and b is the original amount of the loan. Find the approximate annual interest rate for an automobile loan to be repaid in 48 monthly installments if the finance charge on the loan is \$521 and the original loan balance is \$280. (Round your answer to two decimal places, if necessary.) 81) _____

A) 91.14% B) 92.7% C) 95.02% D) 87.26%

82) Students at East Central High School earned \$760 selling pennants. They want to make \$3980 for a club trip. What percent of their goal has been reached? Round to the nearest tenth of a percent, if necessary. 82) _____

- A) 52% B) 1.9% C) 19.1% D) 5.2%

83) Tech Support spent \$43,790 this year on advertising alone. If total sales were \$736,200, what percent of total sales was spent on advertising? Round to the nearest tenth of a percent, if necessary. 83) _____

- A) 0.6% B) 168% C) 16.8% D) 5.9%

84) A printer priced at \$581 is sold for \$411. What was the percent of price reduction? Round to the nearest tenth of a percent, if necessary. 84) _____

- A) 29.3% B) 141.4% C) 70.7% D) 341.8%

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question. Provide an appropriate response.

85) Suppose the formula $A = 2\pi rh + 2\pi r^2$ is solved for r with the following result: $r = \frac{A}{2\pi h + 2\pi r}$ 85) _____
. Is this an acceptable solution? Explain.

86) Suppose the formula $s = \frac{1}{2}gt^2 + v_0t$ is solved for t with the following result: $t = \frac{2s}{gt + 2v_0}$ 86) _____
. Is this an acceptable solution? Explain.

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

87) Which of the following is not a correct answer when the formula $A = \frac{1}{2}h(b + B)$ is solved for b? 87) _____
A) $A - \frac{1}{2}Bh$ B) $\frac{2A - B}{h}$ C) $\frac{2A}{h} - B$ D) $\frac{2A - Bh}{h}$
 $\frac{1}{2}h$

88) Whiof the ch followi

ng is not 88)

a correct

answer

when the

formula

$$V = \frac{1}{3}\pi r^2 h$$

is

solved

for h?

A) $\frac{1}{3} \left(\frac{V}{\pi r^2} \right)$

B) $\frac{3}{\left(\frac{V}{\pi r^2} \right)}$

C) $\frac{3V}{\pi r^2}$

D) $\frac{V}{\frac{1}{3}\pi r^2}$

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

- 89) The volume of a rectangular solid is to be 36 cubic units. Give two sets of possible dimensions for the solid. 89) _____

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

- 90) In order to purchase molding for a window, would you need to use perimeter or area to decide how much to buy? 90) _____
A) Area B) Perimeter

- 91) In order to purchase tile for a floor, would you need to use perimeter or area to decide how much to buy? 91) _____
A) Perimeter B) Area

Translate the verbal phrase into a mathematical expression. Use x to represent the unknown number.

- 92) 70 more than a number 92) _____
A) $70 + x$ B) 70 C) $70 - x$ D) $70x$

- 93) 66 greater than a number 93) _____
A) $x - 66$ B) $66x$ C) 66 D) $x + 66$

- 94) 58 less than a number 94) _____
A) $58 - x$ B) $58x$ C) $x - 58$ D) $x + 58$

- 95) 4 times a number 95) _____
A) $\frac{4}{x}$ B) $4x$ C) $4 - x$ D) $4 + x$

- 96) A number divided by 98 96) _____
A) $98x$ B) $\frac{x}{98}$ C) $98 + x$ D) $98 - x$

- 97) 135 divided by some number 97) _____
A) $135 - x$ B) $\frac{135}{x}$ C) $135 + x$ D) $135x$

- 98) Four times a number added to 7 98) _____
A) $4x(7 + x)$ B) $4x - 7$ C) $4(x + 7)$ D) $4x + 7$

- 99) The product of 6 and 1 less than a number
 A) $6(1 - x)$ B) $6(x + 1)$ C) $6x - 1$ D) $6(x - 1)$ 99) _____
- 100) The product of 4 more than a number and 2 less than the number
 A) $x + 4(x - 2)$ B) $(x + 4) - 2$ C) $(x + 4)(x - 2)$ D) $(x + 4)(2 - x)$ 100) _____
- 101) The quotient of 30 and ten times a nonzero number
 A) $\frac{30}{10 + x}$ ($x \neq 0$) B) $\frac{30}{10x}$ ($x = 0$) C) $\frac{30}{10x}$ ($x \neq 0$) D) $\frac{10}{30x}$ ($x \neq 0$) 101) _____

Use the variable x for the unknown, and write an equation representing the verbal sentence. Then solve the problem.

- 102) Four times a number added to 7 times the number equals 33. 102) _____
 A) $7x + 4x = 33; 3$ B) $4x(7 + x) = 33; -3$
 C) $7x - 4x = 33; 3$ D) $4(x + 7) = 33x; -3$
- 103) When 5 times a number is subtracted from 7 times the number, the result is 16. 103) _____
 A) $5(x - 7) = 16x; 2$ B) $7x - 5x = 16; 8$
 C) $5x(7 - x) = 16; -8$ D) $5x + 8x = 16; 2$
- 104) If 3 times a number is added to -10, the result is equal to 13 times the number. 104) _____
 A) $13(3x - 10) = -10; -1$ B) $3x + (-10) = 13x; -1$
 C) $3x + 10x = 13; 1$ D) $3x - (-10) = 13x; 1$
- 105) $\frac{1}{4}$ 105) _____
 When $\frac{1}{4}$ of a number is added to 20, the result is 38.
 A) $\frac{1}{4}x - 20 = 38; 232$ B) $\frac{1}{4} + x = 38; 38$
 C) $38 + \frac{1}{4}x = 20; 72$ D) $20 + \frac{1}{4}x = 38; 72$
- 106) When 50% of a number is subtracted from 70, the result is 2 less than the number. 106) _____
 A) $70 - 0.5x = x - 2; 48$ B) $70 - 50 = x - 2; 22$
 C) $0.5x - 70 = x - 2; -136$ D) $70 + 0.5x = x - 2; 144$

Decide whether the following is an expression or an equation. Simplify any expression or solve any equation.

- 107) $9x - (5x - 1) = 2$ 107) _____
 A) Expression; $2x + 5$ B) Equation; $\left\{\frac{1}{14}\right\}$
 C) Equation; $\left\{\frac{1}{4}\right\}$ D) Expression; $5x + 2$
- 108) $3(2x - 4) = 5(x + 3)$ 108) _____
 A) Equation; $\{27\}$ B) Expression; $5x - 3$
 C) Expression; $5x + 3$ D) Equation; $\{-3\}$
- 109) $-5(2x + 6) + 4(9x + 9)$ 109) _____
 A) Expression; $26x + 6$ B) Equation; $\{26\}$
 C) Expression; $-3x + 1$ D) Equation; $\{-40\}$
- 110) $2(x + 5) - 3(x - 8) = 0$ 110) _____

- A) Equation; $\{-14\}$
 C) Expression; $2x - 8$

- B) Equation; $\{34\}$
 D) Expression; $2x + 3$

111) $\frac{2}{3}x - \frac{5}{9}x + \frac{1}{18}x - 1$ 111) _____

A) Equation; $\left\{\frac{1}{9}\right\}$

B) Expression; $\frac{1}{6}x - 1$

C) Expression; $\frac{4}{9}x - 1$

D) Equation; $\left\{-\frac{1}{18}\right\}$

112) $-3(x + 2) + 8(x - 3) = 7$ 112) _____

A) Expression; $5x - 37$

B) Equation; $\left\{-\frac{37}{11}\right\}$

C) Expression; $5x + 23$

D) Equation; $\left\{\frac{37}{5}\right\}$

113) $\frac{1}{5}x + \frac{1}{2}x - \frac{1}{3}x + 2$ 113) _____

A) Equation; $\left\{-\frac{25}{7}\right\}$

B) Equation; $\{5\}$

C) Expression; $\frac{7}{10}x + \frac{5}{3}$

D) Expression; $\frac{3}{10}x + \frac{7}{3}$

Solve the problem.

114) Find the length of a rectangular lot with a perimeter of 124 m if the length is 8 m more than the width. 114) _____

- A) 70 m B) 27 m C) 62 m D) 35 m

115) A square plywood platform has a perimeter which is 11 times the length of a side, decreased by 21. Find the length of a side. 115) _____

- A) 10 B) 3 C) 7 D) 1

116) A rectangular Persian carpet has a perimeter of 204 inches. The length of the carpet is 30 in. more than the width. What are the dimensions of the carpet? 116) _____

- A) Width: 87 in.; length: 117 in. B) Width: 72 in.; length: 102 in.
 C) Width: 66 in.; length: 96 in. D) Width: 36 in.; length: 66 in.

117) A pie-shaped (triangular) lake-front lot has a perimeter of 1300 ft. One side is 100 ft longer than the shortest side, while the third side is 300 ft longer than the shortest side. Find the lengths of all three sides. 117) _____

- A) 300 ft, 400 ft, 600 ft B) 100 ft, 200 ft, 300 ft
 C) 400 ft, 400 ft, 400 ft D) 400 ft, 500 ft, 700 ft

118) Gloria collected 21 fantail and comet goldfish. There were 5 fewer fantails than comets. How many comets did Gloria have? 118) _____

- A) 9 comets B) 16 comets C) 8 comets D) 13 comets

119) The two largest oil spills together released 359 million gallons of oil into the oceans. The smaller of the two released 27 million gallons less than the larger of the two. How many million gallons of oil did the larger one release? 119) _____

- A) 110 million gallons
- C) 332 million gallons

- B) 193 million gallons
- D) 166 million gallons

- 120) A biologist collected 267 fern and moss samples. There were 83 fewer ferns than moss samples. How many fern samples did the biologist collect? 120) _____
- A) 184 fern samples
 - C) 175 fern samples
 - B) 92 fern samples
 - D) 129 fern samples
- 121) In a recent school board election, the two candidates for president received 2398 votes. The loser received 1406 fewer votes than the winner. How many votes did the winner receive? 121) _____
- A) 992 votes
 - B) 1654 votes
 - C) 1902 votes
 - D) 496 votes

Solve the percent problem.

- 122) If Gloria received a 8 percent raise and is now making \$24,840 a year, what was her salary before the raise? 122) _____
- A) \$23,000
 - B) \$22,840
 - C) \$23,840
 - D) \$24,000
- 123) Stevie bought a stereo for \$245 and put it on sale at his store at a 65% markup rate. What was the retail price of the stereo? 123) _____
- A) \$345.00
 - B) \$304.25
 - C) \$490.00
 - D) \$404.25
- 124) An investor bought 100 shares of stock. The value of the shares went up 9% and then he sold them. How much did the investor pay for the 100 shares if he sold them for \$1635? 124) _____
- A) \$1550
 - B) \$1585
 - C) \$1500
 - D) \$1782
- 125) At the end of the day, a storekeeper had \$1030 in the cash register, counting both the sale of goods and the sales tax of 3%. Find the amount that is the tax. 125) _____
- A) \$35
 - B) \$25
 - C) \$20
 - D) \$30
- 126) After receiving a discount of 15.5% on its bulk order of typewriter ribbons, John's Office Supply pays \$4394. What was the price of the order before the discount? 126) _____
- A) \$3713
 - B) \$5200
 - C) \$3933
 - D) \$5075
- 127) After spending \$3850 for tables and \$4050 for chairs, a convention center manager finds that 45% of his original budget remains. Find the amount that remains. Round your answer to the nearest dollar, if necessary. 127) _____
- A) \$6464
 - B) \$3555
 - C) \$7364
 - D) \$14,364
- 128) Midtown Antiques collects 2% sales tax on all sales. If total sales including tax are \$1790.78, find the portion that is the tax. Round your answer to the nearest cent. 128) _____
- A) \$35.82
 - B) \$1755.67
 - C) \$25.11
 - D) \$35.11

Solve the investment problem.

- 129) Mardi received an inheritance of \$70,000. She invested part at 10% and deposited the remainder in tax-free bonds at 8%. Her total annual income from the investments was \$6200. Find the amount invested at 10%. 129) _____
- A) \$63,800
 - B) \$29,000
 - C) \$30,000
 - D) \$15,000
- 130) Walt made an extra \$10,000 last year from a part-time job. He invested part of the money at 7% and the rest at 8%. He made a total of \$740 in interest. How much was invested at 8%? 130) _____
- A) \$6000
 - B) \$5000
 - C) \$4000
 - D) \$8000

- 131) Roberto invested some money at 6%, and then invested \$5000 more than twice this amount at 11%. His total annual income from the two investments was \$4190. How much was invested at 11%? 131) _____
- A) \$31,000 B) \$3100 C) \$26,000 D) \$15,000

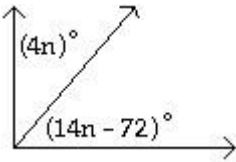
Solve the mixture problem.

- 132) It is necessary to have a 40% antifreeze solution in the radiator of a certain car. The radiator now has 40 liters of 20% solution. How many liters of this should be drained and replaced with 100% antifreeze to get the desired strength? 132) _____
- A) 20 liters B) 16 liters C) 10 liters D) 13.3 liters
- 133) How many liters of a 30% alcohol solution must be mixed with 60 liters of a 50% solution to get a 40% solution? 133) _____
- A) 12 liters B) 120 liters C) 60 liters D) 6 liters
- 134) In a chemistry class, 6 liters of a 4% silver iodide solution must be mixed with a 10% solution to get a 6% solution. How many liters of the 10% solution are needed? 134) _____
- A) 4 liters B) 6 liters C) 2 liters D) 3 liters
- 135) A merchant has coffee worth \$4 a pound that she wishes to mix with 90 pounds of coffee worth \$8 a pound to get a mixture worth \$7 a pound. How many pounds of the \$4 coffee should be used? 135) _____
- A) 30 lb B) 60 lb C) 120 lb D) 15 lb

Solve the problem.

- 136) Jay drove 288 kilometers at the average rate of 72 kilometers per hour. How long did the trip take? 136) _____
- A) 2 hours B) 4 hours C) 3 hours D) 5 hours
- 137) Janet drove 244 kilometers and the trip took 4 hours. How fast was Janet traveling? 137) _____
- A) 81 kilometers per hour B) 51 kilometers per hour
C) 71 kilometers per hour D) 61 kilometers per hour
- 138) What amount of money is found in a coin purse containing 17 dimes and 5 quarters? 138) _____
- A) \$4.75 B) \$2.95 C) \$0.22 D) \$295.00
- 139) An equilateral triangle has perimeter 18 inches. What would be the perimeter of a square whose sides each measure the same length as the side of the triangle? 139) _____
- A) 12 inches B) 6 inches C) 24 inches D) 36 inches
- 140) A convention manager finds that she has \$1280, made up of twenties and fifties. She has a total of 46 bills. How many fifty-dollar bills does the manager have? 140) _____
- A) 46 B) 34 C) 8 D) 12
- 141) A woman has \$1.70 in dimes and nickels. She has 5 more dimes than nickels. How many nickels does she have? 141) _____
- A) 8 B) 3 C) 18 D) 13
- 142) A bank teller has some five-dollar bills and some twenty-dollar bills. The teller has 5 more of the twenties. The total value of the money is \$800. Find the number of five-dollar bills that the teller has. 142) _____
- A) 28 B) 33 C) 38 D) 23

154) Find the measures of the complementary angles.



A) $39^\circ, 51^\circ$

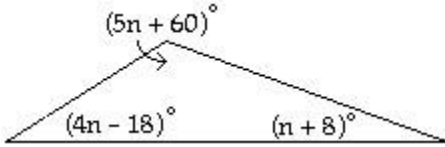
B) $36^\circ, 144^\circ$

C) $43^\circ, 47^\circ$

D) $36^\circ, 54^\circ$

154) _____

155) Find the measure of each angle in the triangle.



A) $38^\circ, 123^\circ, 19^\circ$

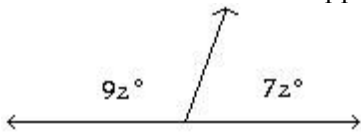
B) $28^\circ, 128^\circ, 24^\circ$

C) $34^\circ, 125^\circ, 21^\circ$

D) $32^\circ, 37^\circ, 21^\circ$

155) _____

156) Find the measures of the supplementary angles.



A) $90^\circ, 70^\circ$

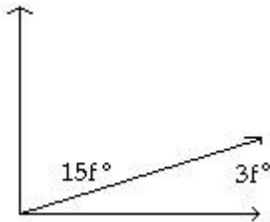
B) $98.25^\circ, 81.75^\circ$

C) $96.25^\circ, 83.75^\circ$

D) $101.25^\circ, 78.75^\circ$

156) _____

157) Find the measures of the complementary angles.



A) $37.5^\circ, 7.5^\circ$

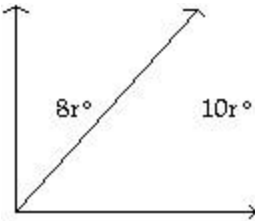
B) $70^\circ, 20^\circ$

C) $150^\circ, 30^\circ$

D) $75^\circ, 15^\circ$

157) _____

158) Find the measures of the complementary angles.



A) $40^\circ, 50^\circ$

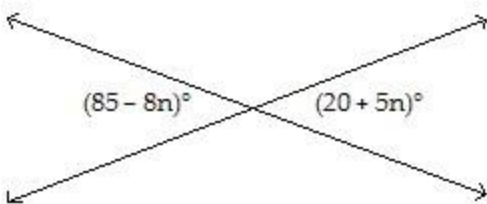
B) $42^\circ, 48^\circ$

C) $45^\circ, 45^\circ$

D) $80^\circ, 100^\circ$

158) _____

159) Find the measures of the vertical angles.



A) $85^\circ, 85^\circ$

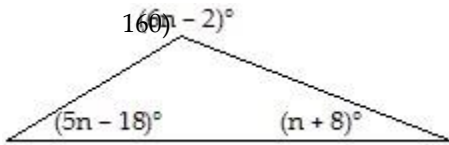
B) $20^\circ, 20^\circ$

C) $45^\circ, 45^\circ$

D) $5^\circ, 5^\circ$

159) _____

160) Find the measure of each angle in the triangle.



- A) $62^\circ, 4^\circ, 24^\circ$ B) $62^\circ, 94^\circ, 24^\circ$ C) $80^\circ, 96^\circ, 16^\circ$ D) $28^\circ, 94^\circ, 24^\circ$

Solve the problem involving consecutive integers.

- 161) The sum of three consecutive odd integers is 261. Find the integers. 161) _____
 A) 87, 89, 91 B) 85, 87, 89 C) 80, 81, 82 D) 89, 91, 93
- 162) The sum of two consecutive integers is -309. Find the larger integer. 162) _____
 A) -153 B) -154 C) -156 D) -155
- 163) Two pages that face each other in a book have 353 as the sum of their page numbers. What is the number of the page that comes first? 163) _____
 A) 174 B) 177 C) 175 D) 176
- 164) If three times the smaller of two consecutive integers is added to four times the larger, the result is 67. Find the smaller integer. 164) _____
 A) 27 B) 9 C) 10 D) 8
- 165) If the first and third of three consecutive odd integers are added, the result is 57 less than five times the second integer. Find the third integer. 165) _____
 A) 21 B) 38 C) 19 D) 17
- 166) The sum of the page numbers on the facing pages of a book is 315. Find the larger page number. 166) _____
 A) 156 B) 153 C) 158 D) 168

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

Provide an appropriate response.

- 167) When solving a "word problem" we set up an equation in x . Give an example where the solution of the equation is not the answer to the problem. 167) _____
- 168) Two angles are complementary. One of the angles is r . How do you express the other angle? 168) _____

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

- 169) Which two of the following equations do not correctly state the relationship between distance, rate and time? 169) _____
 $\frac{d}{t} = r$ (b) $dr = t$
 (c) $\frac{r}{t} = d$ (d) $\frac{d}{r} = t$
 A) (b) & (c) B) (a) & (c) C) (b) & (d) D) (a) & (d)

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

- 170) One student solved a problem involving money by using a denomination based on cents and not on dollars. For example, she multiplied the number of nickels by 5 cents and not by \$0.05. Was she wrong? 170) _____

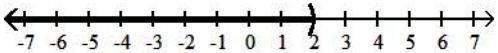
171) If you are given the measure of one angle of a triangle, would you be able to provide the measures of the two other angles? 171) _____

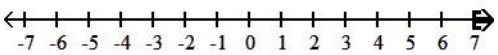
172) Suppose you were to solve a problem involving motion, and the problem gave the rate in miles per hour and the time in minutes. Would you be able to determine the distance traveled? If so, how would you go about it? 172) _____

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

Write an inequality statement involving the letter x that describes the given graph or interval notation.

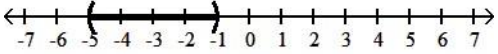
173) $(4, \infty)$ 173) _____
 A) $x \geq 4$ B) $x < 4$ C) $x \leq 4$ D) $x > 4$

174) 174) _____

 A) $x > 2$ B) $x < 2$ C) $x \geq 2$ D) $x \leq 2$

175) 175) _____

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

176) $(-\infty, -2)$ 176) _____
 A) $x \leq -2$ B) $x > -2$ C) $x < -2$ D) $x \geq -2$

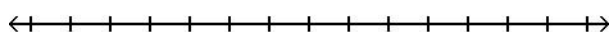
177) $(-2, 2)$ 177) _____
 A) $-2 < x < 2$ B) $-2 \leq x < 2$ C) $-2 \leq x \leq 2$ D) $-2 < x \leq 2$

178) 178) _____

 A) $-5 < x < -1$ B) $-5 \leq x < -1$ C) $-5 \leq x \leq -1$ D) $-5 < x \leq -1$

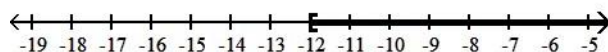
179) $[-1, 3)$ 179) _____
 A) $-1 \leq x < 3$ B) $-1 < x \leq 3$ C) $-1 < x < 3$ D) $-1 \leq x \leq 3$

Solve the inequality. Give the solution set in both interval and graph forms.

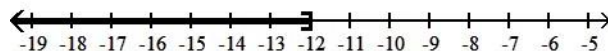
180) $a + 4 < -8$ 180) _____



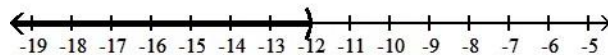
A) $[-12, \infty)$



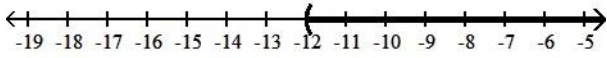
B) $(-\infty, -12]$



C) $(-\infty, -12)$

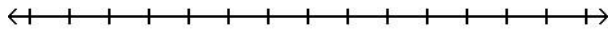


D) $(-12, \infty)$

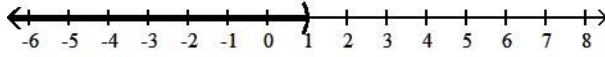


181) $-3z - 2 > -4z + 3$

181) _____



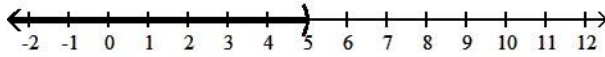
A) $(-\infty, 1)$



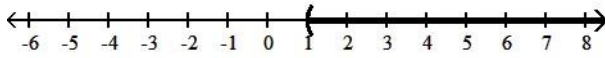
B) $(5, \infty)$



C) $(-\infty, 5)$

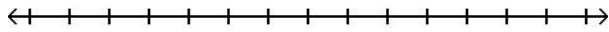


D) $(1, \infty)$

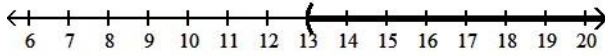


182) $13y + 6 \leq 12y + 16$

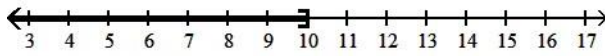
182) _____



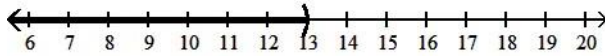
A) $(13, \infty)$



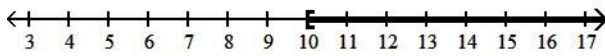
B) $(-\infty, 10]$



C) $(-\infty, 13)$

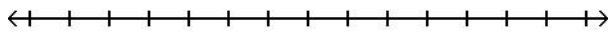


D) $[10, \infty)$

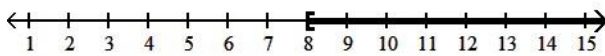


183) $6x - 5 \geq 5x + 3$

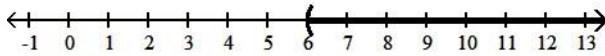
183) _____



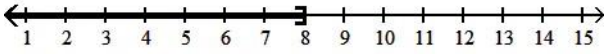
A) $[8, \infty)$



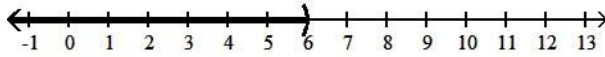
B) $(6, \infty)$



C) $(-\infty, 8]$

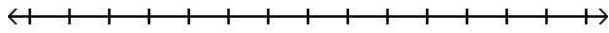


D) $(-\infty, 6)$



184) $20a + 24 > 4(4a + 8)$

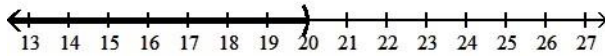
184) _____



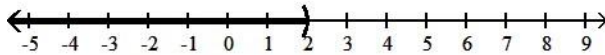
A) $(2, \infty)$



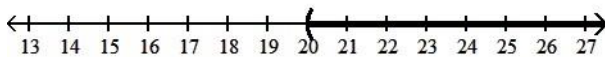
B) $(-\infty, 20)$



C) $(-\infty, 2)$

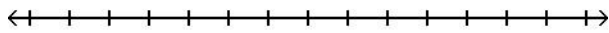


D) $(20, \infty)$

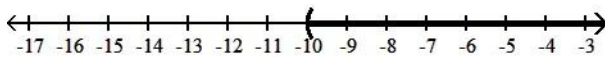


185) $-2(4x + 10) < -10x - 6$

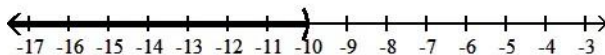
185) _____



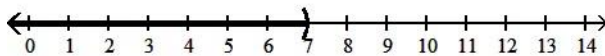
A) $(-10, \infty)$



B) $(-\infty, -10)$



C) $(-\infty, 7)$

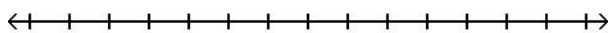


D) $(7, \infty)$

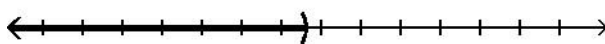


186) $\frac{8x - 5}{6} < \frac{53}{8}$

186) _____

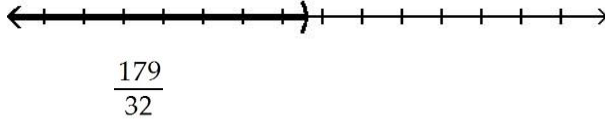


A) $\left[-\infty, \frac{53}{8}\right)$

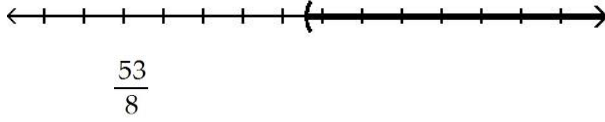


$$\frac{53}{8}$$

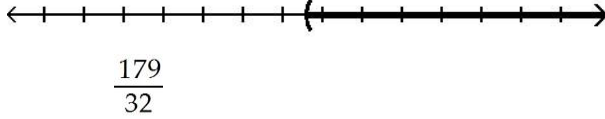
B) $\left(-\infty, \frac{179}{32}\right)$



C) $\left(\frac{53}{8}, \infty\right)$

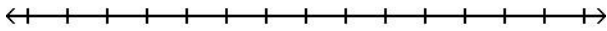


D) $\left(\frac{179}{32}, \infty\right)$

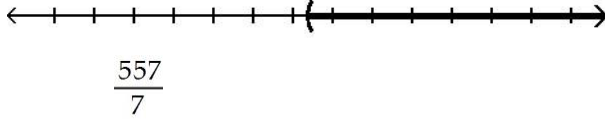


187) $\frac{7x-5}{-9} < \frac{58}{7}$

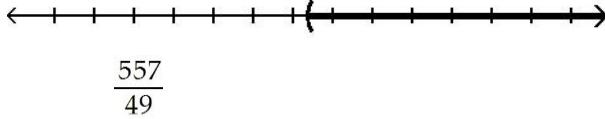
187) _____



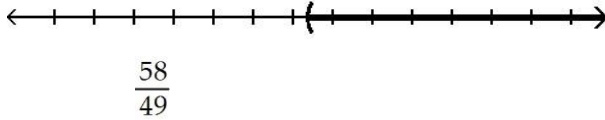
A) $\left(\frac{557}{7}, \infty\right)$



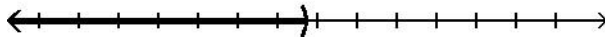
B) $\left(\frac{557}{49}, \infty\right)$



C) $\left(-\frac{58}{49}, \infty\right)$

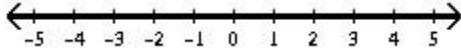


D) $\left(-\infty, -\frac{58}{7}\right)$

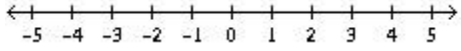


188) $3(6x - 6) < 2(9x - 6)$

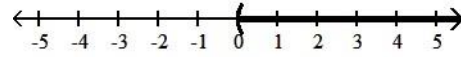
A) $(-\infty, \infty)$



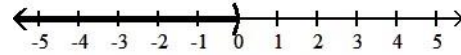
C) \emptyset



B) $(0, \infty)$



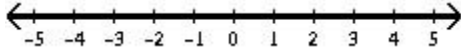
D) $(-\infty, 0)$



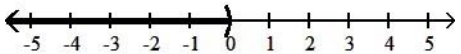
188) _____

189) $-3x + 9(x - 4) > 6x - 2$

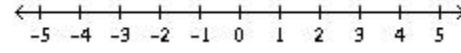
A) $(-\infty, \infty)$



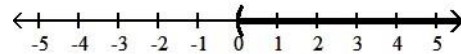
C) $(-\infty, 0)$



B) \emptyset

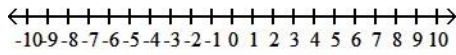


D) $(0, \infty)$

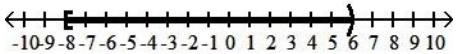


189) _____

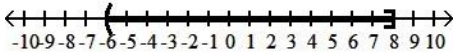
190) $-7 < x + 1 \leq 7$



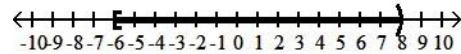
A) $[-8, 6)$



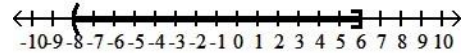
C) $(-6, 8]$



B) $[-6, 8)$

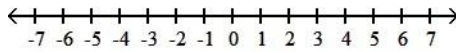


D) $(-8, 6]$

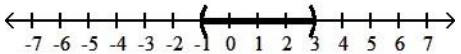


190) _____

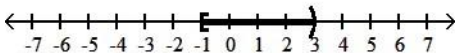
191) $-4 < 4y \leq 12$



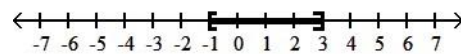
A) $(-1, 3)$



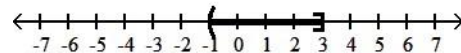
C) $[-1, 3)$



B) $[-1, 3]$

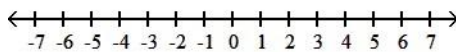


D) $(-1, 3]$

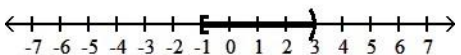


191) _____

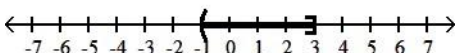
192) $-15 < -5z \leq 5$



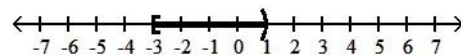
A) $[-1, 3)$



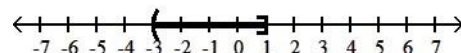
C) $(-1, 3]$



B) $[-3, 1)$

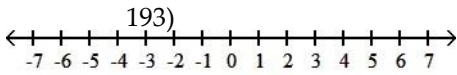


D) $(-3, 1]$

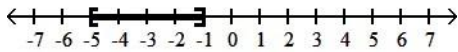


192) _____

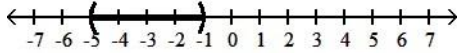
193) $-5 < 2b + 5 \leq 3$



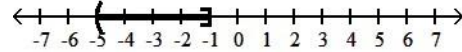
A) $[-5, -1]$



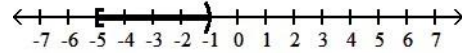
C) $(-5, -1)$



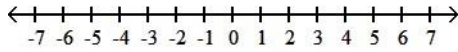
B) $(-5, -1]$



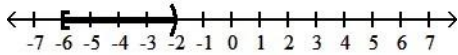
D) $[-5, -1)$



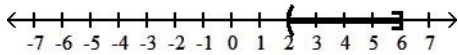
194) $9 < -3y + 3 \leq 21$



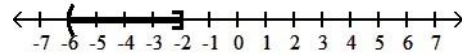
A) $[-6, -2)$



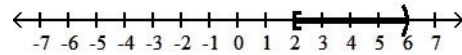
C) $(2, 6]$



B) $(-6, -2]$



D) $[2, 6)$



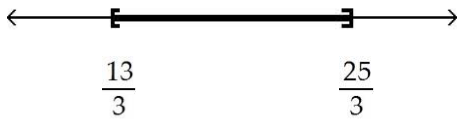
195) $6 \leq \frac{3x-1}{2} \leq 12$



A) $\left[\frac{13}{3}, \frac{25}{3}\right]$



C) $\left[-\frac{13}{3}, \frac{25}{3}\right]$



B) $\left(\frac{13}{3}, \frac{25}{3}\right)$



D) $\left[-\frac{25}{3}, \frac{13}{3}\right]$



196) $4 < 1 - 4x \leq 12$



A) $\left[-\frac{11}{4}, \frac{3}{4}\right]$



C) $\left[-\frac{11}{4}, \frac{3}{4}\right]$

B) $\left[-\frac{11}{4}, -\frac{3}{4}\right]$

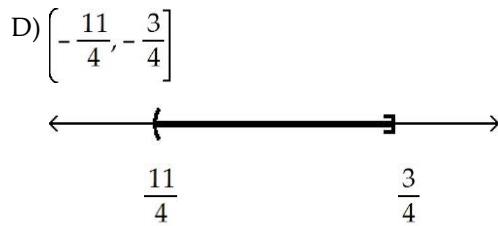


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194) _____

195) _____

196) _____



Solve the problem.

- 197) A salesperson has two job offers. Company A offers a weekly salary of \$210 plus commission of 6% of sales. Company B offers a weekly salary of \$420 plus commission of 3% of sales. What is the amount of sales above which Company A's offer is the better of the two? 197) _____
 A) \$7000 B) \$7100 C) \$14,000 D) \$3500
- 198) Company A rents copiers for a monthly charge of \$300 plus 10 cents per copy. Company B rents copiers for a monthly charge of \$600 plus 5 cents per copy. What is the number of copies above which Company A's charges are the higher of the two? 198) _____
 A) 6100 copies B) 3000 copies C) 12,000 copies D) 6000 copies
- 199) A car rental company has two rental rates. Rate 1 is \$30 per day plus \$.12 per mile. Rate 2 is \$60 per day plus \$.06 per mile. If you plan to rent for one day, how many miles would you need to drive to pay less by taking Rate 2? 199) _____
 A) more than 600 miles B) more than 500 miles
 C) more than 1000 miles D) more than 250 miles
- 200) Jim has gotten scores of 71 and 87 on his first two tests. What score must he get on his third test to keep an average of 80 or greater? 200) _____
 A) At least 81 B) At least 79 C) At least 79.3 D) At least 82
- 201) A bag of marbles has twice as many blue marbles as green marbles, and the bag has at least 9 marbles in it. At least how many green marbles does it have? 201) _____
 A) At least 4 green marbles B) At least 5 green marbles
 C) At least 3 green marbles D) At least 6 green marbles
- 202) Jon has 816 points in his math class. He must have 89% of the 1000 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? 202) _____
 A) 726 points B) 890 points C) 74 points D) 184 points
- 203) Correct Computers, Inc. finds that the cost to make x laptop computers is $C = 2253x + 109,453$, while the revenue produced from them is $R = 4042x$ (C and R are in dollars). What is the smallest whole number of computers, x , that must be sold for the company to show a profit? 203) _____
 A) 18 B) 195,811,417 C) 62 D) 689,006,635
- 204) Fantastic Flags, Inc. finds that the cost to make x flags is $C = 7x + 19,484$, while the revenue produced from them is $R = 31x$ (C and R are in dollars). What is the smallest whole number of flags, x , that must be sold for the company to show a profit? 204) _____
 A) 513 B) 812 C) 740,392 D) 467,616
- 205) Behemoth Back Packs, Inc. finds that the cost to make x back packs is $C = 98x + 8370$, while the revenue produced from them is $R = 180x$ (C and R are in dollars). What is the smallest whole number of back packs, x , that must be sold for the company to show a profit? 205) _____

C) {s, u, w}

D) {q, s, u, v, w, x, y, z} or A

220) $A \cap D$

A) {v, x}

C) {q, s, u, v, w, x, y}

B) {s} or D

D) {s, u, w}

220) _____

221) $C \cup B$

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

C) {s, u, w}

B) {q, s, v, w, x, y, z}

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

221) _____

222) $B \cap C$

A) {q, s, w, y, z}

B) {q, y, z}

C) {q, w, y}

D) {y, z}

222) _____

223) $B \cup C$

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

C) {y, z}

B) {q, s, u, w, y, z}

D) {q, w, y, z}

223) _____

224) $C \cup D$

A) {s, u, w, y, z}

B) {w, y}

C) {w, y, z}

D) {s, v, w, x, y, z}

224) _____

225) $C \cap D$

A) \emptyset

B) {q, w, y}

C) {q, y, z}

D) {q, s, u, w, y, z}

225) _____

226) $C \cup A$

A) \emptyset

C) {q, s, u, v, w, x, y, z} or A

B) {q, s, u, v, x, y, z}

D) {s, t}

226) _____

227) $A \cap \emptyset$

A) {q, s, u, v, x, z}

C) \emptyset

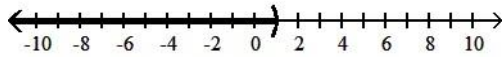
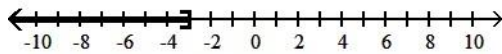
B) {q, s, u, v, w, x, y, z} or A

D) {w, y}

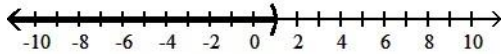
227) _____

Graph the union or intersection of the two sets, as requested.

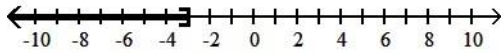
228) Intersection



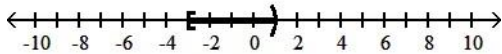
A)



B)

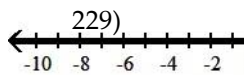
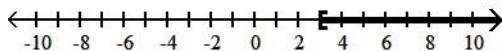


C)

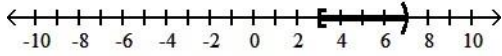


228) _____

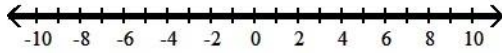
229) Intersection



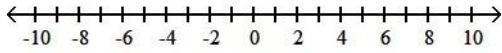
A)



B)

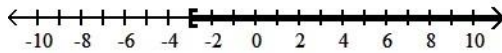
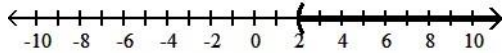


C)

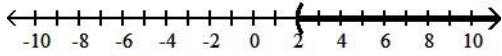


230) Union

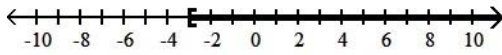
230) _____



A)



B)

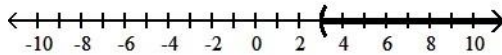
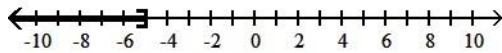


C)

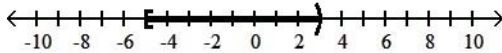


231) Union

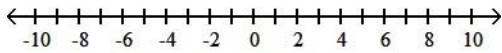
231) _____



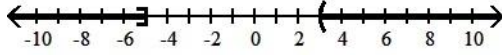
A)



B)



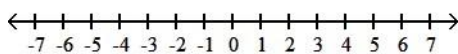
C)



For the compound inequality, give the solution set in both interval and graph forms.

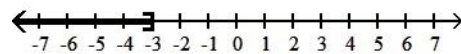
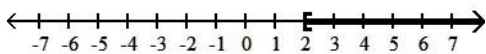
232) $x \geq 2$ and $x \geq -3$

232) _____

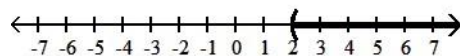


A) $[2, \infty)$

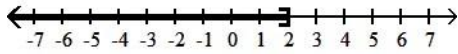
B) $(-\infty, -3]$



C) $(2, \infty)$

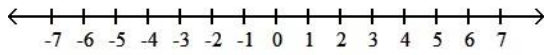


D) $(-\infty, 2]$

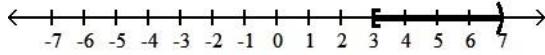


233) $6x + 6 \geq 24$ and $6x + 6 \leq 48$

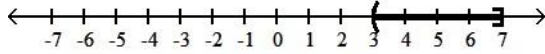
233) _____



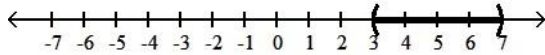
A) $[3, 7)$



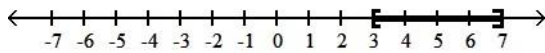
B) $(3, 7]$



C) $(3, 7)$

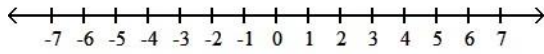


D) $[3, 7]$

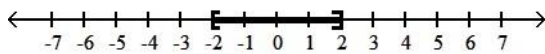


234) $-12 < 3x - 6$ and $8x - 4 < 12$

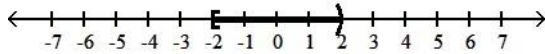
234) _____



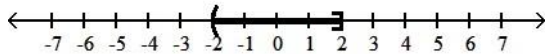
A) $[-2, 2]$



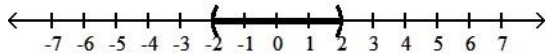
B) $[-2, 2)$



C) $(-2, 2]$

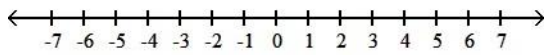


D) $(-2, 2)$

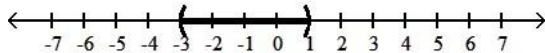


235) $-21 \leq 5x - 6$ and $5x + 4 < 9$

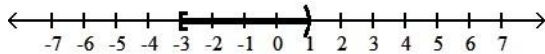
235) _____



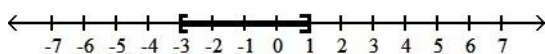
A) $(-3, 1)$



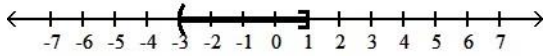
B) $[-3, 1)$



C) $[-3, 1]$

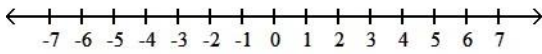


D) $(-3, 1]$

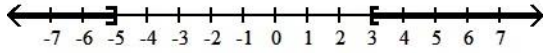


236) $6x - 2 \geq -32$ and $2x - 7 \geq -1$

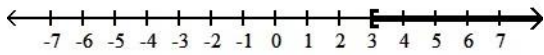
236) _____



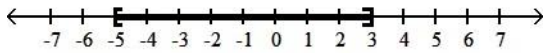
A) $(-\infty, -5] \cup [3, \infty)$



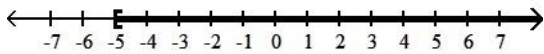
B) $[3, \infty)$



C) $[-5, 3]$

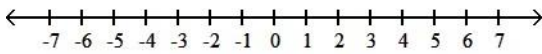


D) $[-5, \infty)$

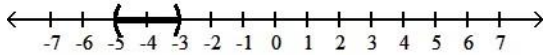


237) $2x + 9 < -1$ and $-2 - 6x > 16$

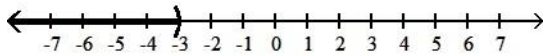
237) _____



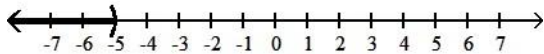
A) $(-5, -3)$



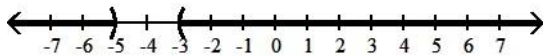
B) $(-\infty, -3)$



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

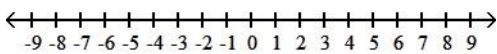


D) $(-\infty, -5) \cup (-3, \infty)$

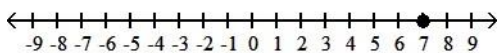


238) $4x - 10 \leq 18$ and $2x - 1 \geq 13$

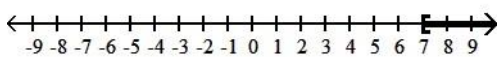
238) _____



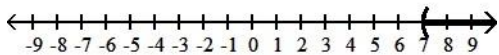
A) $\{7\}$



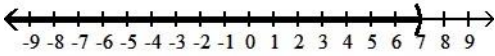
B) $[7, \infty)$



C) $(7, \infty)$

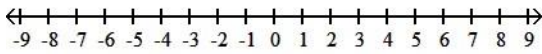


D) $(-\infty, 7)$

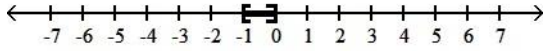


239) $4x > 4$ and $x + 5 < 5$

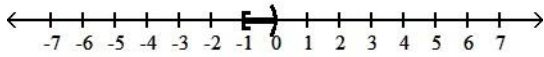
239) _____



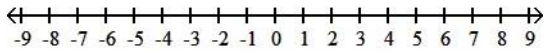
A) $[-1, 0]$



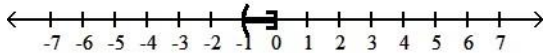
B) $[-1, 0)$



C) \emptyset

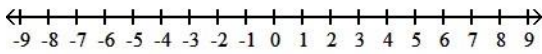


D) $(-1, 0]$

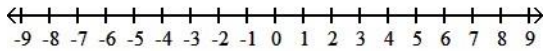


240) $5x - 1 < 4$ and $x - 2 > -1$

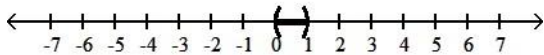
240) _____



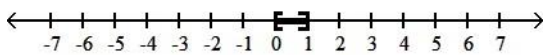
A) \emptyset



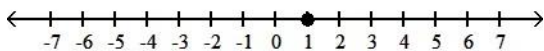
B) $(0, 1)$



C) $[0, 1]$

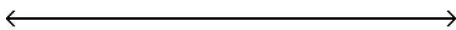


D) $\{1\}$



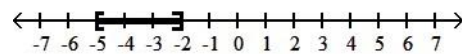
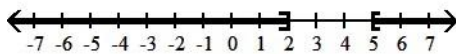
241) $x \leq 2$ or $x \geq 5$

241) _____



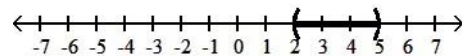
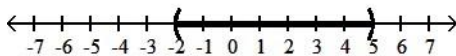
A) $(-\infty, 2] \cup [5, \infty)$

B) $[-5, -2]$



C) $(-2, 5)$

D) $(2, 5)$

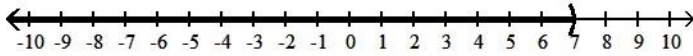


242) $x < 3$ or $x < 7$

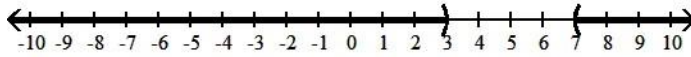
242) _____



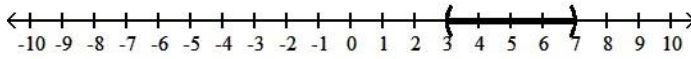
A) $(-\infty, 7)$



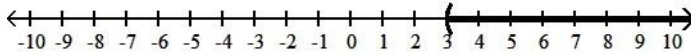
B) $(-\infty, 3) \cup (7, \infty)$



C) $(3, 7)$



D) $(3, \infty)$

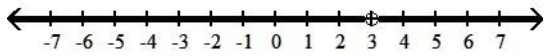


243) $x > 3$ or $x < 3$

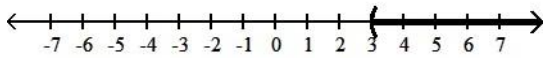
243) _____



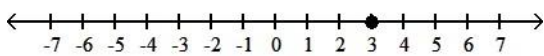
A) $(-\infty, 3) \cup (3, \infty)$



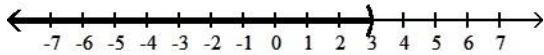
B) $(3, \infty)$



C) $\{3\}$



D) $(-\infty, 3)$

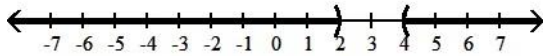


244) $x - 2 > 2$ or $x + 3 < 1$

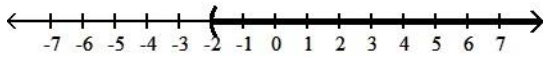
244) _____



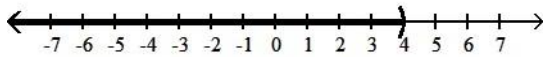
A) $(-\infty, 2) \cup (4, \infty)$



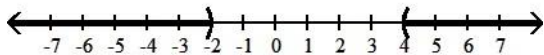
B) $(-2, \infty)$



C) $(-\infty, 4)$

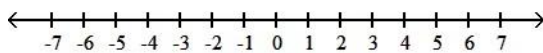


D) $(-\infty, -2) \cup (4, \infty)$

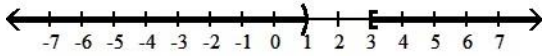


245) $6x - 4 < 2x$ or $-4x \leq -12$

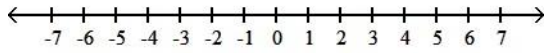
245) _____



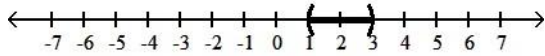
A) $(-\infty, 1) \cup [3, \infty)$



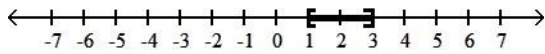
B) \emptyset



C) (1, 3)



D) [1, 3]

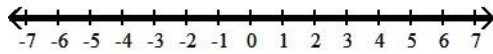


246) $-7x + 1 \geq 15$ or $6x + 3 \geq -21$

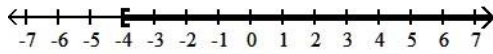
246) _____



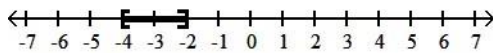
A) $(-\infty, \infty)$



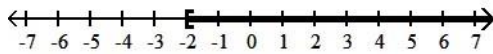
B) $[-4, \infty)$



C) $[-4, -2]$



D) $[-2, \infty)$



Express the set in the simplest interval form.

247) $(-\infty, 7) \cap (-8, \infty)$

247) _____

A) $[-8, 7)$

B) $(-8, 7)$

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

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

248) $(-1, 6] \cap (1, \infty)$

248) _____

A) $(-1, \infty)$

B) $(-1, 6]$

C) $(1, 6]$

D) $[1, 6]$

249) $(-\infty, 5] \cup (-\infty, -4)$

249) _____

A) $(-4, 5]$

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

C) $(-\infty, 5)$

D) $(-\infty, 5]$

250) $(-7, 4) \cup [-3, 9]$

250) _____

A) $(-7, 4)$

B) $[-3, 9]$

C) $[-3, 4)$

D) $(-7, 9]$

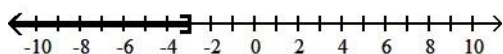
For the compound inequality, decide whether intersection or union should be used. Then give the solution set in both interval and graph forms.

251) $x \leq -3$ and $x < -2$

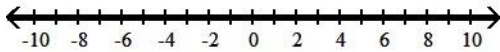
251) _____



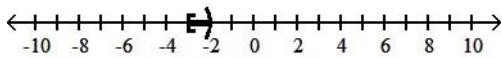
A) Intersection; $(-\infty, -3]$



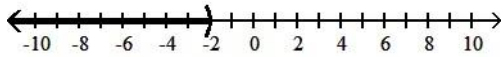
B) Union; $(-\infty, \infty)$



C) Intersection; $[-3, -2)$



D) Union; $(-\infty, -2)$

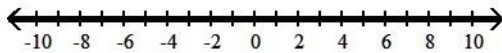


252) $x \geq 3$ and $x < 10$

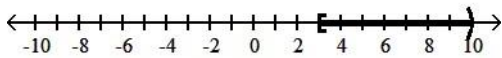
252) _____



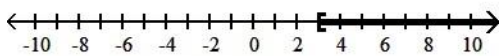
A) Union; $(-\infty, \infty)$



B) Intersection; $[3, 10)$



C) Intersection; $(3, \infty)$



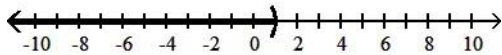
D) Intersection; \emptyset

253) $x < 1$ or $x > -9$

253) _____



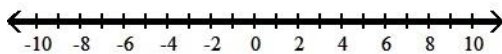
A) Intersection; $(-\infty, 1)$



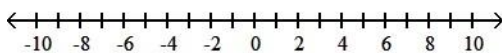
B) Intersection; $[-9, 1)$



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



D) Intersection; \emptyset

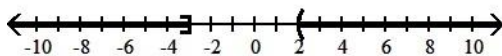


254) $x \leq -3$ or $x > 2$

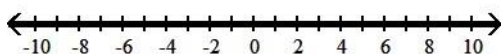
254) _____



A) Union; $(-\infty, -3] \cup (2, \infty)$



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



C) {Irina, Sergey}

D) None

258) The list gives the name of each decorator and the size of the room.

258) _____

| | |
|---------|-----------|
| Mary | 9' x 12' |
| John | 10' x 12' |
| Noriko | 12' x 12' |
| Sun Woo | 12' x 13' |
| Rosa | 14' x 17' |
| Pedro | 13' x 15' |

Give the names of the decorators who will not have enough paint, but will have enough border for their rooms. (Assume a ceiling height of 8' for each room.)

A) {Noriko, Sun Woo}

B) {Rosa, Pedro}

C) {Mary, John}

D) None

259) The list gives the name of each decorator and the size of the room.

259) _____

| | |
|----------|-----------|
| Sue | 9' x 12' |
| John | 10' x 12' |
| Yong Sun | 12' x 12' |
| Ajay | 12' x 13' |
| Rosa | 14' x 17' |
| Pedro | 13' x 15' |

Give the names of the decorators who will have neither enough paint nor enough border. (Assume a ceiling height of 8' for each room.)

A) {Yong Sun, Ajay}

B) {Sue, John}

C) {Rosa, Pedro}

D) None

260) The list gives the name of each decorator and the size of the room.

260) _____

| | |
|----------|-----------|
| Jane | 9' x 12' |
| Sam | 10' x 12' |
| Noriko | 12' x 12' |
| Sun Woo | 12' x 13' |
| Consuela | 14' x 17' |
| Manuel | 13' x 15' |

Give the names of the decorators who will have either enough paint or enough border or both. (Assume a ceiling height of 8' for each room.)

A) {Consuela, Manuel}

B) All

C) {Jane, Sam, Noriko, Sun Woo}

D) None

True or false?

261) $(A \cap B) \cap C = A \cap (B \cap C)$

261) _____

A) True

B) False

262) $(A \cup B) \cap C = A \cup (B \cap C)$

262) _____

A) True

B) False

263) The intersection of the sets $(-\infty, 23)$ and $(23, \infty)$ is $\{23\}$.

263) _____

A) True

B) False

- 264) The union of the sets $(-\infty, 12]$ and $(12, \infty)$ is $(-\infty, \infty)$ 264) _____
 A) True B) False
- 265) The intersection of the set of rational numbers and the set of whole numbers is the set of rational numbers. 265) _____
 A) True B) False
- 266) The union of the set of rational numbers and the set of integers is the set of rational numbers. 266) _____
 A) True B) False
- 267) "You win if your card contains the number 23 or the number 45" is an example of union applied to a real-life situation. 267) _____
 A) True B) False
- 268) The intersection of the set of positive numbers and the set of negative numbers is $\{0\}$. 268) _____
 A) True B) False
- 269) The intersection of the set of nonpositive rational numbers and the set of whole numbers is $\{0\}$. 269) _____
 A) True B) False

Solve the equation.

- 270) $|x| = 4$ 270) _____
 A) $\{16\}$ B) $\{-4\}$ C) $\{4\}$ D) $\{4, -4\}$
- 271) $|x| = 6.9$ 271) _____
 A) $\{4761\}$ B) $\{6.9\}$ C) $\{6.9, -6.9\}$ D) $\{-6.9\}$
- 272) $|8x| = 16$ 272) _____
 A) $\{-2, 2\}$ B) $\{0, 2\}$ C) $\{2\}$ D) $\{-2, 0\}$
- 273) $|t - 9| = 0$ 273) _____
 A) $(-\infty, -9] \cup [9, \infty)$ B) $\{-9\}$ C) $\{9\}$ D) \emptyset
- 274) $|b + 9| = 5$ 274) _____
 A) \emptyset B) $\{-4\}$ C) $\{-4, -14\}$ D) $\{4, 14\}$
- 275) $|6m + 5| = 6$ 275) _____
 A) $\left\{-\frac{1}{6}, \frac{11}{6}\right\}$ B) $\left\{\frac{1}{6}, -\frac{11}{6}\right\}$ C) $\left\{\frac{1}{5}, -\frac{11}{5}\right\}$ D) \emptyset
- 276) $|9 - 3p| = 6$ 276) _____
 A) $\{1, 5\}$ B) $\{-5, -1\}$ C) $\{5\}$ D) $\{-5, 1\}$
- 277) $\left|5 + \frac{1}{6}x\right| = 4$ 277) _____
 A) $\{-54, -6\}$ B) \emptyset C) $\{6, 54\}$ D) $\{54, -6\}$
- 278) $\left|11 - \frac{12}{5}x\right| = 3$ 278) _____
 A) $\left\{\frac{35}{6}, \frac{10}{3}\right\}$ B) $\{-14, 8\}$ C) $\{8, 14\}$ D) $\left\{-\frac{35}{6}, \frac{10}{3}\right\}$

279) $|0.05x - 3| = 6.05$

A) $\{0, 181\}$

B) $\{61, 181\}$

C) $\{-61, 181\}$

D) $\{181\}$

279) _____

280) $|5 - 0.05x| = 5$

A) $\{0, 100\}$

B) $\{0, 200\}$

C) $\{100\}$

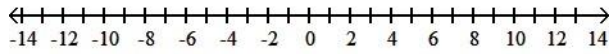
D) $\{200\}$

280) _____

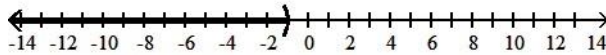
Solve the inequality and graph the solution set.

281) $|x| > 1$

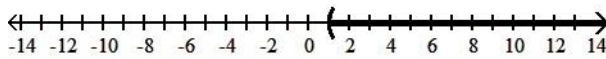
281) _____



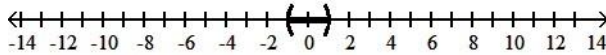
A) $(-1, \infty)$



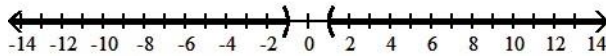
B) $(1, \infty)$



C) $(-1, 1)$

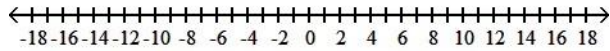


D) $(-\infty, -1) \cup (1, \infty)$

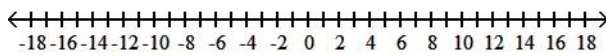


282) $|r - 4| > 3$

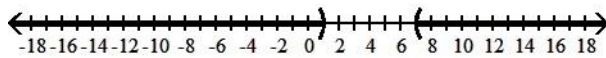
282) _____



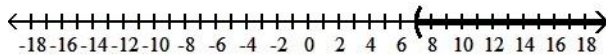
A) \emptyset



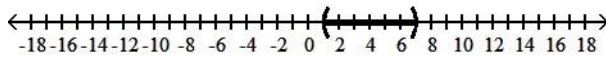
B) $(-\infty, 1) \cup (7, \infty)$



C) $(7, \infty)$

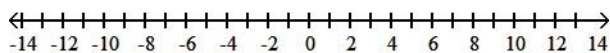


D) $(1, 7)$



283) $|9x - 5| \geq 7$

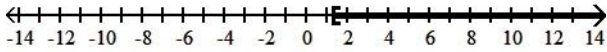
283) _____



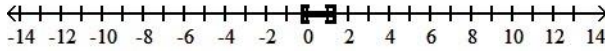
A) $\left[-\infty, -\frac{2}{9}\right] \cup \left[\frac{4}{3}, \infty\right)$



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



C) $\left[-\frac{2}{9}, \frac{4}{3}\right]$

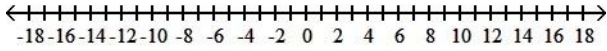


D) $\left(-\infty, -\frac{4}{3}\right] \cup \left[\frac{2}{9}, \infty\right)$

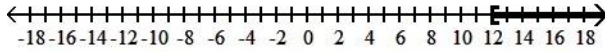


284) $|4 - x| \geq 8$

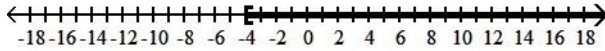
284) _____



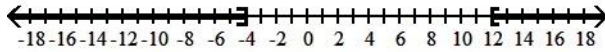
A) $[12, \infty)$



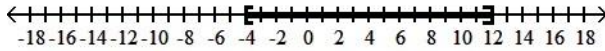
B) $[-4, \infty)$



C) $(-\infty, -4] \cup [12, \infty)$

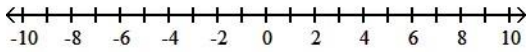


D) $[-4, 12]$

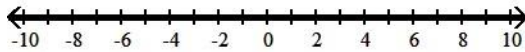


285) $|2y - 4| > -9$

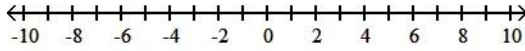
285) _____



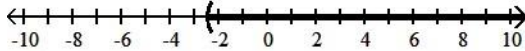
A) $(-\infty, \infty)$



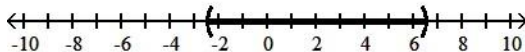
B) \emptyset



C) $\left(-\frac{5}{2}, \infty\right)$

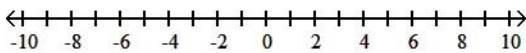


D) $\left(-\frac{5}{2}, \frac{13}{2}\right)$

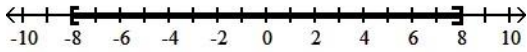


286) $|z + 8| \geq 0$

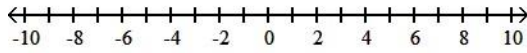
286) _____



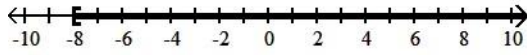
A) $[-8, 8]$



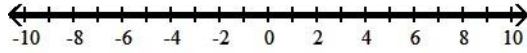
B) \emptyset



C) $[-8, \infty)$

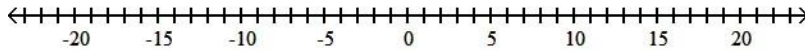


D) $(-\infty, \infty)$

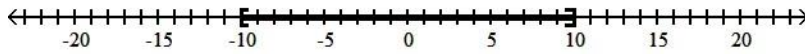


287) $|x| \leq 10$

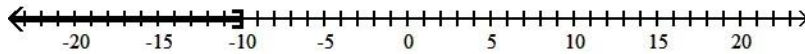
287) _____



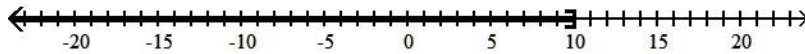
A) $[-10, 10]$



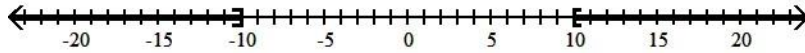
B) $(-\infty, -10]$



C) $(-\infty, 10]$

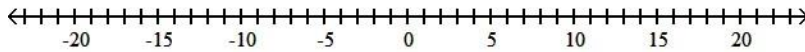


D) $(-\infty, -10] \cup [10, \infty)$

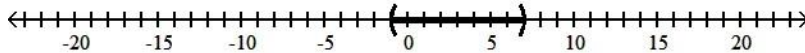


288) $|g - 3| < 4$

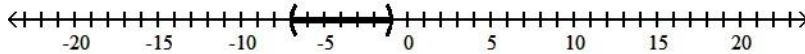
288) _____



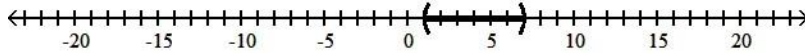
A) $(-1, 7)$



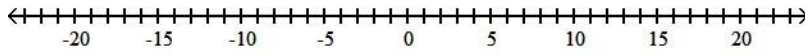
B) $(-1, -7)$



C) $(1, 7)$

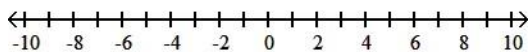


D) \emptyset



289) $|9x + 1| < 4$

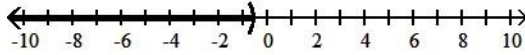
289) _____



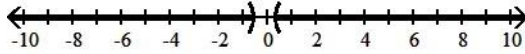
A) $\left(-\frac{5}{9}, \frac{1}{3}\right)$



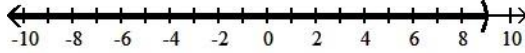
B) $\left(-\infty, -\frac{5}{9}\right)$



C) $\left(-\infty, -\frac{5}{9}\right) \cup \left(\frac{1}{3}, \infty\right)$

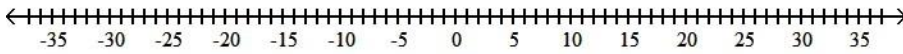


D) $(-\infty, 9)$

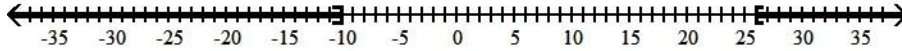


290) $|8 - x| \leq 18$

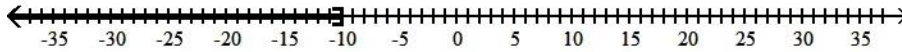
290) _____



A) $(-\infty, -10] \cup [26, \infty)$



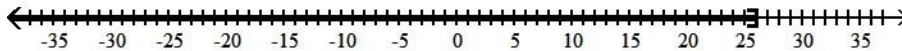
B) $(-\infty, -10]$



C) $[-10, 26]$

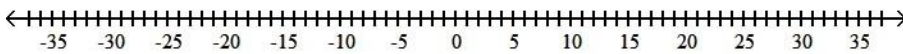


D) $(-\infty, 26]$

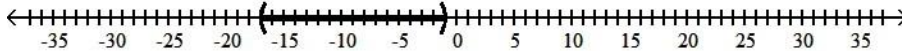


291) $|h + 9| \leq 8$

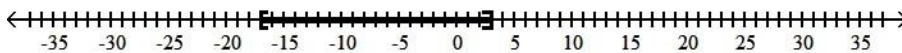
291) _____



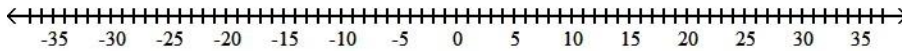
A) $(-17, -1)$



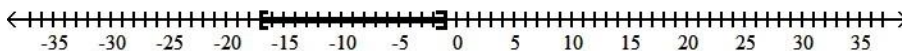
B) $[-17, 3]$



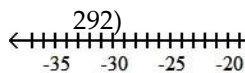
C) \emptyset



D) $[-17, -1]$

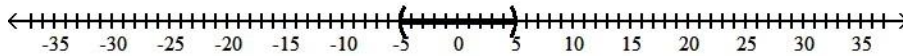


292) $|m + 5| < 0$

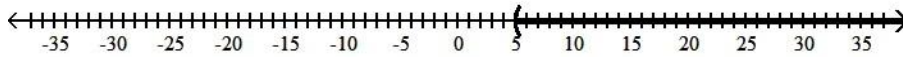


292)

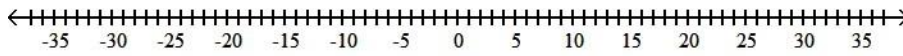
A) (5, -5)



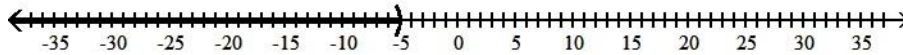
B) (5, ∞)



C) ∅



D) (-∞, -5)



Solve the given equation or inequality. If an equation is given, then write the solution set in set notation. If an inequality is given, then write the solution set in interval notation.

293) $|x| + 3 = 15$

293) _____

A) {- 15, 15}

B) {12}

C) {- 15}

D) {- 12, 12}

294) $|y + 3| - 5 = 8$

294) _____

A) {10}

B) {13, -13}

C) {12, 15}

D) {10, -16}

295) $|h - 4| + 2 \leq 7$

295) _____

A) (-1,9)

B) [-1,9]

C) [-1,7]

D) ∅

296) $|8k + 4| + 7 < 12$

296) _____

A) $\left(-\frac{9}{8}, \frac{1}{8}\right)$

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

C) ∅

D) $\left(-\infty, -\frac{9}{8}\right) \cup \left(\frac{1}{8}, \infty\right)$

297) $|4x + 7| + 5 < 3$

297) _____

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

B) $\left(-\infty, -\frac{5}{4}\right) \cup \left(-\frac{9}{4}, \infty\right)$

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

D) ∅

298) $|3y - 3| - 8 > -13$

298) _____

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

B) ∅

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

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

299) $\left|\frac{1}{5}x + \frac{1}{5}\right| + \frac{1}{8} = \frac{5}{8}$

299) _____

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

B) $\left\{0, \frac{3}{2}\right\}$

C) $\left(-\infty, -\frac{7}{2}\right] \cup \left[\frac{3}{2}, \infty\right)$

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

300) $|0.2x - 1.1| + 0.2 \geq 0.7$

300) _____

A) $\{3, 8\}$

B) $(-\infty, 3] \cap [8, \infty)$

C) $(-\infty, 3] \cup [8, \infty)$

D) $(3, 8)$

Solve the equation.

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

301) _____

A) $\{16, 12\}$

B) $\{0\}$

C) $\{16, 0\}$

D) \emptyset

302) =

302) _____

A) $\left\{ \frac{3}{4} \right\}$

B) $\left\{ -\frac{3}{4}, -\frac{7}{6} \right\}$

C) \emptyset

D) $\left\{ \frac{3}{4}, \frac{7}{6} \right\}$

303) =

303) _____

A) $\left\{ -10, \frac{4}{3} \right\}$

B) $\left\{ 10, -\frac{4}{3} \right\}$

C) \emptyset

D) $\{10\}$

304) $|8s - 7| = |s - 4|$

304) _____

A) $\left\{ \frac{3}{7}, \frac{11}{9} \right\}$

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

C) \emptyset

D) $\left\{ \frac{3}{7}, -\frac{10}{7} \right\}$

305) $|n - 2| = |7 - n|$

305) _____

A) $\left\{ \frac{9}{2} \right\}$

B) $\{9\}$

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

D) \emptyset

306) $|n - 2| = |2 - n|$

306) _____

A) $\{0\}$

B) \emptyset

C) $\{4\}$

D) $\{2\}$

307) $|4s - 3| = |s + 1|$

307) _____

A) $\left\{ -\frac{4}{3}, -\frac{2}{5} \right\}$

B) \emptyset

C) $\left\{ \frac{4}{3} \right\}$

D) $\left\{ \frac{4}{3}, \frac{2}{5} \right\}$

Solve the equation or inequality.

308) $|b| = -2$

308) _____

A) $\left\{ \frac{1}{2} \right\}$

B) $\{-2\}$

C) \emptyset

D) $\{2\}$

309) $|7f + 2| = -6$

309) _____

A) $\left\{ -\frac{6}{7}, -\frac{8}{7} \right\}$

B) $\left\{ \frac{4}{7}, \frac{8}{7} \right\}$

C) \emptyset

D) $\left\{ -\frac{8}{7} \right\}$

310) $|m - 5| = 0$

310) _____

A) $(-5, \infty)$

B) $(-\infty, 5)$

C) $\{5\}$

D) $\{-5, 5\}$

311) $|-5x + 6| > -5$

311) _____

A) \emptyset

B) $\left(\frac{1}{5}, \frac{11}{5} \right)$

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

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

312) $|x + 6| \leq 0$

312) _____

A) $\{6\}$

B) $\{-6\}$

C) $(-\infty, -6)$

D) \emptyset

313) $|z + 4| \geq 0$

313) _____

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

- B) $[-4, 4]$
 D) \emptyset

314) $|6x - 5| - 3 < -9$

A) $\left[-\infty, -\frac{1}{6}\right)$

B) $\left[-\frac{1}{6}, \frac{11}{6}\right)$

C) $\left[-\infty, \frac{11}{6}\right)$

D) \emptyset

314) _____

315) $|5x - 1| - 6 > -8$

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

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

C) \emptyset

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

315) _____

Provide an appropriate response.

316) Determine which of the following is used to solve the equation $|ax + b| = c$, for $c > 0$.

316) _____

A) $ax + b = c$

B) $ax + b = -c$

C) $ax + b = c$ and $ax + b = -c$

D) $ax + b = c$ or $ax + b = -c$

317) Determine which of the following is used to solve the inequality $|ax + b| < c$, for $c > 0$.

317) _____

A) $-c < ax + b < c$

B) $ax + b < c$

C) $-c < ax + b > c$

D) $ax + b < c$ or $ax + b < -c$

318) Determine which of the following is used to solve the inequality $|ax + b| > c$, for $c > 0$.

318) _____

A) $ax + b > c$ or $ax + b > -c$

B) $ax + b > c$ and $ax + b < -c$

C) $ax + b > c$ or $ax + b < -c$

D) $ax + b < c$ and $ax + b > -c$

319) Give the number of solutions for $ax = k$ if $k < 0$.

319) _____

A) 2

B) 0

C) 1

D) An infinite number

320) Give the number of solutions for $ax > k$ if $k < 0$.

320) _____

A) 0

B) An infinite number

C) 2

D) 1

321) Give an equation or inequality that states the distance between $2x$ and 7 is less than 6 .

321) _____

A) $2x - 7 < 6$

B) $|2x + 7| > -6$

C) $|2x - 7| > 6$

D) $|2x - 7| < 6$

Solve the equation.

322) $4(2x + 4) - 2(x - 4) = 3x + 60 + x$

322) _____

A) {42}

B) {26}

C) {18}

D) {34}

323) $0.8x - 0.4(40 + x) = 4$

323) _____

A) {40}

B) {60}

C) {25}

D) {50}

324) $\frac{x-6}{10} + \frac{x+4}{15} = \frac{x-2}{6}$

324) _____

A) {-10}

B) \emptyset

C) {5}

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

Solve the equation. Then tell whether the equation is a conditional equation, an identity, or a contradiction.

325) $2x - (6 - x) + 3x + 6 = 6x + 2$

325) _____

A) {14}; conditional equation

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

C) \emptyset ; contradiction

D) {2}; conditional equation

$$326) \frac{x}{5} + 9 = \frac{11x}{30} - 4 - \frac{x}{6} + 13$$

- A) {0}; conditional equation
C) \emptyset ; contradiction

- B) $(-\infty, \infty)$; identity
D) {11}; conditional equation

326) _____

$$327) -3(3x + 2) = -16 - 8x + 9x$$

- A) {1}; conditional equation
C) {-1}; conditional equation

- B) $(-\infty, \infty)$; identity
D) \emptyset ; contradiction

327) _____

Solve.

$$328) -7y^2 + wy - x = 0 \text{ for } w$$

A) $w = \frac{7y^2 + y}{x}$

B) $w = \frac{x - 7y^2}{y}$

C) $w = \frac{x + 7y^2}{y}$

D) $w = -\frac{x + 7y^2}{y}$

328) _____

$$329) 3s + 5p = tp - 5 \text{ for } p$$

A) $p = \frac{3s + 5}{-t}$ or $p = \frac{-3s - 5}{t}$

B) $p = \frac{3s + 5}{5}$ or $p = \frac{-3s - 5}{-5}$

C) $p = \frac{-3s - 5}{5 - t}$ or $p = \frac{3s + 5}{t - 5}$

D) $p = \frac{5 - t}{-3s - 5}$ or $p = \frac{t - 5}{3s + 5}$

329) _____

Solve the problem.

330) A plane climbs from an altitude of 11,000 ft to a cruising altitude of 33,000 ft. The plane ascends at a rate of 2750 ft/min. How long will it take to reach cruising altitude?

- A) 0.1 min B) 60,500,000 min C) 16 min D) 8 min

330) _____

331) A certificate of deposit pays \$2493.75 in simple interest for 1 yr on a principal on \$37,500. What is the rate of interest?

- A) 7.65% B) 6.65% C) 6.7% D) 6.6%

331) _____

332) Allied Plumbing spent \$33,990 this year on health insurance alone. If total sales were \$485,300, what percent of total sales was spent on health insurance? Round to the nearest tenth of a percent, if necessary.

- A) 143% B) 14.3% C) 7% D) 0.7%

332) _____

333) Walt made an extra \$10,000 last year from a part-time job. He invested part of the money at 10% and the rest at 9%. He made a total of \$970 in interest. How much did he invest at each rate?

- A) \$3000 at 9%; \$7000 at 10% B) \$3000 at 9%; \$8000 at 10%
C) \$7000 at 9%; \$3000 at 10% D) \$5000 at 9%; \$7000 at 10%

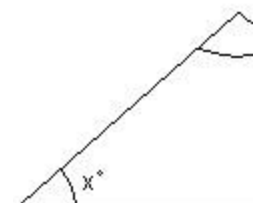
333) _____

334) Jill is 9 kilometers away from Joe. Both begin to walk toward each other at the same time. Jill walks at 2.5 km/hr. They meet in 2 hours. How fast is Joe walking?

- A) 2.25 km/hr B) 7 km/hr C) 4 km/hr D) 2 km/hr

334) _____

335) Find the measure of each angle.



335) _____

A) $34^\circ, 34^\circ, 112^\circ$

B) $20^\circ, 20^\circ, 140^\circ$

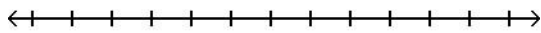
C) $24^\circ, 24^\circ, 132^\circ$

D) $26^\circ, 26^\circ, 128^\circ$

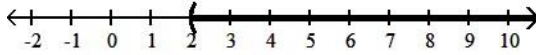
Solve the inequality. Give the solution set in both interval and graph forms.

336) $2 - 5(x + 2) \leq -8 - 2(x + 5) + 2x$

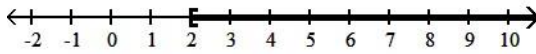
336) _____



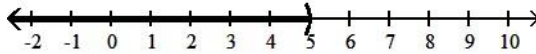
A) $(2, \infty)$



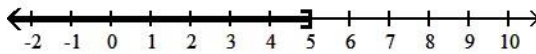
B) $[2, \infty)$



C) $(-\infty, 2)$

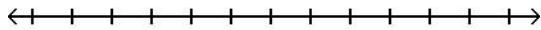


D) $(-\infty, 2]$

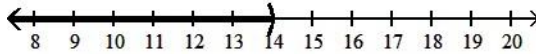


337) $\frac{1}{7}x > -2$

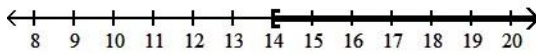
337) _____



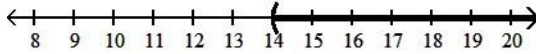
A) $(-\infty, 14)$



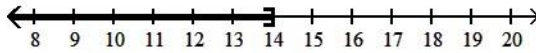
B) $[14, \infty)$



C) $(14, \infty)$

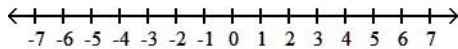


D) $(-\infty, 14]$

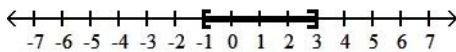


338) $0 < 2y + 2 \leq 8$

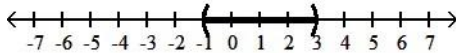
338) _____



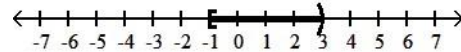
A) $[-1, 3]$



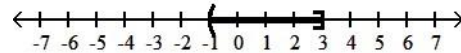
C) $(-1, 3)$



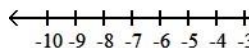
B) $[-1, 3)$

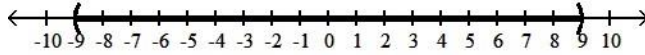
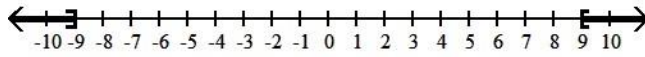
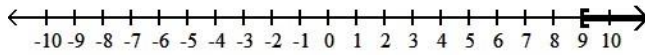
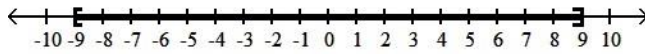


D) $(-1, 3]$



339) $-\frac{4}{3}x - 1 \leq 11$



A) $(-9, 9)$ B) $(-\infty, -9] \cup [9, \infty)$ C) $[9, \infty)$ D) $[-9, 9]$ **Solve the problem.**340) Which one of the following inequalities is equivalent to $b \geq 2$? 340) _____A) $-3b \leq -6$ B) $-3b \geq -6$ C) $-3b \geq -6$ D) $-3b \leq -6$

341) Raymond plans on playing 5 rounds of golf while on vacation. He wants his average to be 90 or less. His scores for the first 4 rounds were 88, 92, 91, and 89. What does he need to score on the last round to meet his goal? 341) _____

A) 80 or less

B) 86 or less

C) 90 or less

D) 90 or more

Find the indicated intersection or union.342) Let $A = \{2, 6, 14, 15, 23\}$ and $B = \{6, 15, 23, 25\}$. Write the set $A \cap B$. 342) _____A) $\{2, 6, 15, 23\}$ B) $\{6, 15, 23, 25\}$ C) $\{6, 15, 23\}$ D) $\{2, 6, 14, 15, 23, 25\}$ 343) Let $A = \{4, 7, 10, 17\}$ and $B = \{7, 17, 23, 29\}$. Write the set $A \cup B$. 343) _____A) $\{4, 7, 17, 23\}$ B) $\{4, 7, 10, 17, 23, 29\}$ C) $\{7, 17, 23\}$ D) $\{7, 17\}$ **Solve the compound or absolute value inequality.**344) $24 \leq 9x - 3$ and $9x - 10 < 53$ 344) _____A) $(3, 7]$ B) $[3, 7)$ C) $[3, 7]$ D) $(3, 7)$ 345) $-4x \leq -12$ or $6x - 4 < 2x$ 345) _____A) $(-\infty, 1) \cup [3, \infty)$ B) $(1, 3)$ C) \emptyset D) $[1, 3]$ 346) $|7x - 2| < 4$ 346) _____A) $\left(-\infty, -\frac{2}{7}\right) \cup \left(\frac{6}{7}, \infty\right)$ B) \emptyset C) $\left(-\infty, -\frac{2}{7}\right)$ D) $\left[-\frac{2}{7}, \frac{6}{7}\right)$ 347) $|9 - 9x| \geq 5$ 347) _____A) $\left(-\infty, -\frac{14}{9}\right] \cup [5, \infty)$ B) $\frac{14}{9}$ C) $\left[\frac{4}{9}, \frac{14}{9}\right]$ D) $\left[-\infty, \frac{4}{9}\right] \cup \left[\frac{14}{9}, \infty\right)$

348) $|y - 8| \leq -13$

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

B) $[7, 20]$

C) $[5, 20]$

D) \emptyset

348) _____

349) $| -7x - 1 | - 5 < -3$

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

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

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

D) \emptyset

349) _____

Solve the absolute value equation.

350) $|7k + 4| - 2 = 5$

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

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

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

D) \emptyset

350) _____

351) $|3s + 3| = |-5 - s|$

A) $\{1, -2\}$

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

C) $\{-1, 2\}$

D) $\{1\}$

351) _____

Answer the question.

352) If $k < 0$, what is the solution set of $|5f - 3| < k$

A) \emptyset

B) $\{0\}$

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

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

352) _____

353) If $k < 0$, what is the solution set of $|5f - 6| > k$

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

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

C) $\{0\}$

D) \emptyset

353) _____

354) If $k < 0$, what is the solution set of $|6f - 8| = k$

A) $\{0\}$

B) \emptyset

C) $\left\{\frac{k-8}{6}\right\}$

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

354) _____

- 1) A
- 2) B
- 3) A
- 4) B
- 5) A
- 6) B
- 7) B
- 8) A
- 9) A
- 10) A
- 11) A
- 12) B
- 13) B
- 14) A
- 15) D
- 16) C
- 17) B
- 18) D
- 19) C
- 20) B
- 21) D
- 22) D
- 23) A
- 24) C
- 25) B
- 26) B
- 27) A
- 28) D
- 29) D
- 30) A
- 31) B
- 32) C
- 33) C
- 34) D
- 35) A
- 36) A
- 37) A
- 38) A
- 39) B
- 40) C
- 41) C
- 42) C
- 43) C
- 44) A
- 45) A
- 46) A
- 47) The solution set is \emptyset .
- 48) True. Each has the solution set $\{3\}$.
- 49) False. The equation is a contradiction, and thus the solution set is \emptyset .
- 50) False. The equation is an identity, and thus the solution set is {all real numbers}.
- 51) Since the equation is an identity, the solution set is {all real numbers}.

- 52) C
- 53) B
- 54) C
- 55) D
- 56) C
- 57) D
- 58) A
- 59) C
- 60) D
- 61) D
- 62) A
- 63) A
- 64) D
- 65) C
- 66) C
- 67) B
- 68) C
- 69) A
- 70) A
- 71) C
- 72) D
- 73) C
- 74) B
- 75) A
- 76) D
- 77) B
- 78) B
- 79) C
- 80) C
- 81) A
- 82) C
- 83) D
- 84) A
- 85) No. The variable r should not appear on both sides of the equation in the solution.
- 86) No. The variable t should not appear on both sides of the equation in the solution.
- 87) B
- 88) A
- 89) Answers will vary, but the product of the three dimensions must be 36.
- 90) B
- 91) B
- 92) A
- 93) D
- 94) C
- 95) B
- 96) B
- 97) B
- 98) D
- 99) D
- 100) C
- 101) C
- 102) A
- 103) B

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

- 156) D
157) D
158) A
159) C
160) B
161) B
162) B
163) D
164) B
165) A
166) C
167) Answers will vary. An example would be: One number is twice another and their sum is 60. Find the larger number. To solve this problem, the equation would be $x + 2x = 60$. $x = 20$. The problem asks for the larger number, which is $2x = 2(20) = 40$.
168) $90 - r$
169) A
170) Answers will vary. The student was not wrong. For example, if the problem asked to find the total amount, she may have intended to provide her final result in cents and not in dollars. Furthermore, if she had wanted to provide a final result in dollars, all she would need to do is divide the final result in cents by 100. As long as she was consistent in her use of denominations based on cents, her results would be valid.
171) No. Not enough information is given.
172) Yes. You would need to convert the rate to miles per minute or the time to hours before proceeding to solve for the distance in miles.
173) D
174) B
175) C
176) C
177) A
178) A
179) A
180) C
181) B
182) B
183) A
184) A
185) C
186) B
187) B
188) A
189) B
190) D
191) D
192) A
193) B
194) A
195) A
196) B
197) A
198) D
199) B
200) D
201) C

- 202) C
- 203) C
- 204) B
- 205) C
- 206) C
- 207) A
- 208) B
- 209) A
- 210) When multiplying or dividing by a negative number.
- 211) No, since you don't have to divide or multiply by a negative number. The fact that the number you are dividing into is negative is irrelevant. (Explanations will vary.)
- 212) Choice (a) is not.
- 213) No. The second statement only follows from the first if a and b are either both positive or both negative. Divide both sides of the original inequality by (ab). If a and b are of opposite signs, then $(ab) < 0$. When dividing by a negative number, the inequality sign must be reversed (thus, $\frac{a}{ab} > \frac{b}{ab}$, and $\frac{1}{b} > \frac{1}{a}$). In addition, if a (or b) is zero, then its reciprocal is undefined. (Explanations will vary.)
- 214) Yes, since $b^2 > 0 > b$.
- 215) Yes. Adding a positive or negative number to both sides of an inequality produces an equivalent inequality. (Explanations will vary.)
- 216) No..Multiplying an inequality by a negative number requires reversing the inequality symbol. (Explanations will vary.)
- 217) No. It is only true that $a^2 \leq b^2$ if $|a| \leq |b|$. For example, it is true that $-5 \leq -3$. However, it is not true that $(-5)^2 \leq (-3)^2$ since $25 > 9$. (Explanations will vary.)
- 218) C
- 219) D
- 220) B
- 221) B
- 222) D
- 223) A
- 224) D
- 225) A
- 226) C
- 227) C
- 228) B
- 229) A
- 230) B
- 231) C
- 232) A
- 233) D
- 234) D
- 235) B
- 236) B
- 237) C
- 238) A
- 239) C
- 240) A
- 241) A
- 242) A
- 243) A
- 244) D

245) A
246) A
247) B
248) C
249) D
250) D
251) A
252) B
253) C
254) A
255) C
256) C
257) C
258) D
259) C
260) C
261) A
262) B
263) B
264) A
265) B
266) A
267) A
268) B
269) A
270) D
271) C
272) A
273) C
274) C
275) B
276) A
277) A
278) A
279) C
280) B
281) D
282) B
283) A
284) C
285) A
286) D
287) A
288) A
289) A
290) C
291) D
292) C
293) D
294) D
295) B
296) A

297) D
298) D
299) D
300) C
301) C
302) D
303) B
304) A
305) A
306) D
307) D
308) C
309) C
310) C
311) C
312) B
313) C
314) D
315) A
316) D
317) A
318) C
319) B
320) B
321) D
322) C
323) D
324) D
325) C
326) B
327) A
328) C
329) C
330) D
331) B
332) C
333) A
334) D
335) C
336) B
337) A
338) D
339) D
340) D
341) C
342) C
343) B
344) B
345) A
346) D
347) D
348) D

349) C

350) C

351) A

352) A

353) B

354) B