Algebra 1 Placement Test Study Guide

Answers

Evaluate each expression.

1) $(-5) - 7 + 6 \times (-2)$ -24

2) $\dfrac{9-(-3)}{-2} + 9$ 3

3) $(-3) \times \left(\dfrac{-5}{-1}\right) - 9$ -24

Evaluate each using the values given.

4) $2(x-(y-yz))$; use $x=-3$, $y=-5$, and $z=10$ -95

5) $\dfrac{r-q}{2} - (-4)^2$; use $q=1$, and $r=-1$ -17

Evaluate each expression.

6) $90 + 36 - 6 - (-91)$ 211

7) $96 - 26 + 89 - (-81)$ 240

8) $93 - (-69) + (-50) - 12$ 100

Find each product.

9) $(2)(6)(-4)$ -48

10) $(-3)(5)(6)$ -90

Find each quotient.

11) $5\dfrac{3}{8} \div \dfrac{7}{4}$ $\dfrac{43}{14}$

12) $-3\dfrac{3}{10} \div \dfrac{7}{4}$ $-\dfrac{66}{35}$

13) $-3 \div \dfrac{3}{5}$ -5

Simplify each expression.

14) $-7(2r+6) - 5$ $-14r - 47$

15) $6m + 8(2 + 6m)$ $54m + 16$

16) $-8(x-8) - 6(1 - 3x)$ $10x + 58$

17) $8n(5n+5) + 6(n+5)$ $40n^2 + 46n + 30$

Solve each equation.

18) $30 - x = 16$ $\{14\}$

19) $-20 = b - (-3)$ $\{-23\}$

20) $v - (-22) = 18$ $\{-4\}$

21) $5200 = 80n$ $\{65\}$

22) $495 = 55a$ $\{9\}$

23) $\dfrac{k+5}{9} = -1$ $\{-14\}$

24) $\dfrac{-6+p}{28} = -1$ $\{-22\}$

25) $\dfrac{-9+x}{-2} = 16$ $\{-23\}$

26) $-1 + 15m = 314$ $\{21\}$

27) $-13n - 16 = 283$ $\{-23\}$

28) $1 - 6r - 2r = 9$ $\{-1\}$

29) $6x - 5 + 5 = 12$ $\{2\}$

30) $19 - 5n = 6(1 - 3n)$ $\{-1\}$

31) $38 - 8b = 3(b - 2)$ $\{4\}$

32) $9(x + 12) - x = -(12 + 12x)$ $\{-6\}$

33) $5(7 - 6r) - 9 = -6(1 + 5r) - 4r$ $\{-8\}$

34) $|a + 6| = 4$ $\{-2, -10\}$

35) $\left|\frac{n}{4}\right| = 2$ $\{8, -8\}$

36) $|-4 - 6v| = 8$ $\left\{-2, \frac{2}{3}\right\}$

37) $|x + 7| = 2$ $\{-5, -9\}$

38) $1 - |8 + 7x| = -70$ $\left\{9, -\frac{79}{7}\right\}$

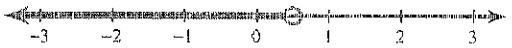
39) $-2|5n + 6| = -82$ $\left\{7, -\frac{47}{5}\right\}$

Draw a graph for each inequality.

40) $v > 1$

41) $x > 4$

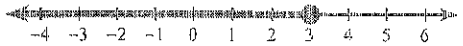
42) $-\frac{1}{2} < -b$



43) $-\frac{1}{2} \leq n$

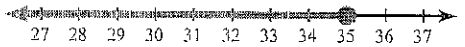
Solve each inequality and graph its solution.

44) $r + 8 \leq 11$



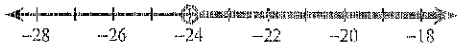
$r \leq 3$

45) $\frac{m}{7} \leq 5$



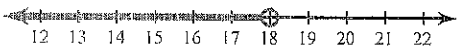
$m \leq 35$

46) $n + (-8) > -32$



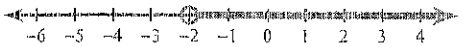
$n > -24$

47) $x + 1 < 19$



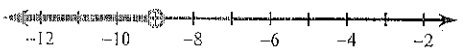
$x < 18$

48) $-3(-3 + b) < 15$



$b > -2$

49) $3 + 4v < -33$

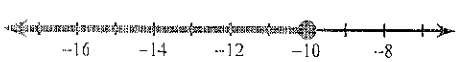


$v < -9$

50) $-3 + \frac{x}{9} < -2$

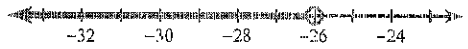
$x < 9$

51) $\frac{n}{10} - 6 \leq -7$



$n \leq -10$

52) $\frac{a}{26} + 11 < 10$

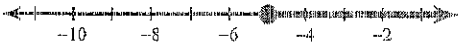


$a < -26$

53) $-18 + 5n > -7(-4n - 4)$

$n < -2$

54) $-7(x - 2) + 6x \geq -6 - 5x$



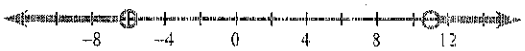
$x \geq -5$

55) $-12 - 2x > 7(x + 6)$

$x < -6$

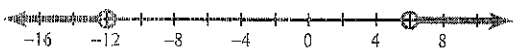
Solve each compound inequality and graph its solution.

56) $11 + 8n < -37$ or $5n + 12 > 67$



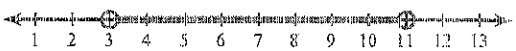
$n < -6$ or $n > 11$

57) $9 + 6m < -63$ or $8 + 11m > 74$



$m < -12$ or $m > 6$

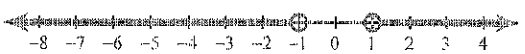
58) $3r + 2 < 35$ and $-6r + 4 < -14$



$3 < r < 11$

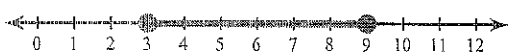
Solve each inequality and graph its solution.

59) $|-4n| > 4$



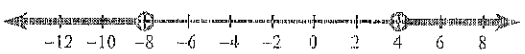
$n < -1$ or $n > 1$

60) $|x - 6| \leq 3$



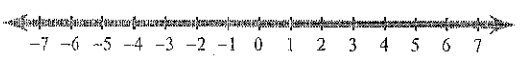
$3 \leq x \leq 9$

61) $|3b + 6| > 18$



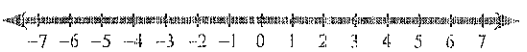
$b > 4$ or $b < -8$

62) $|2 + 3v| \geq -19$



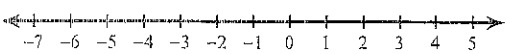
{ All real numbers. }

63) $|8x - 3| \geq -91$



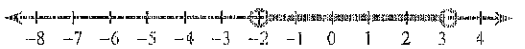
{ All real numbers. }

64) $7 + |-10n - 3| \leq -96$



No solution.

65) $|7a - 4| - 2 < 16$



$-2 < a < \frac{22}{7}$

Solve each proportion.

66) $\frac{9}{10} = \frac{x}{7}$ $\{6.3\}$

67) $\frac{12}{10} = -\frac{9}{v}$ $\{-7.5\}$

68) $\frac{x-4}{8} = \frac{x-6}{6}$ $\{12\}$

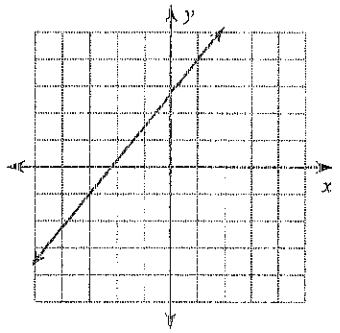
69) $\frac{3}{12} = \frac{n+1}{n-10}$ $\{-4.66\}$

Find the slope of each line.

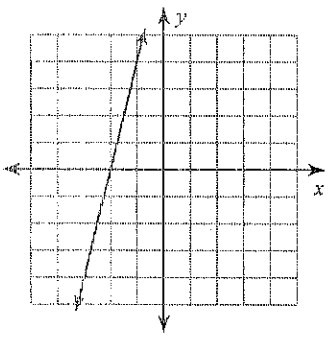
70) $y = -2x + 5$ -2

71) $y = 6x + 5$ 6

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



73) 4

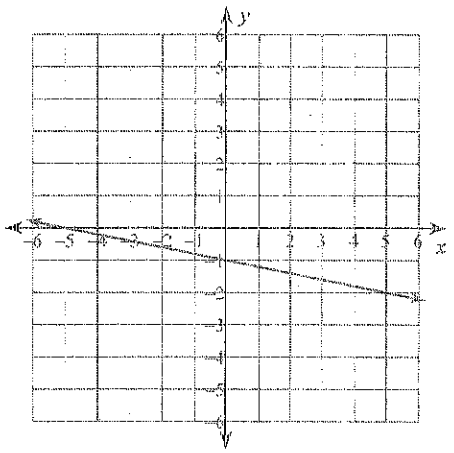


Find the slope of a line perpendicular to each given line.

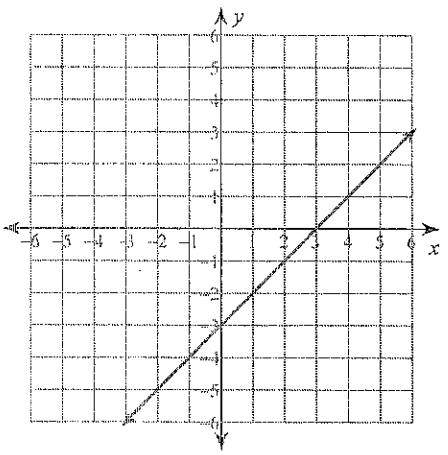
74) $2x + y = -1$ $\frac{1}{2}$

Sketch the graph of each line.

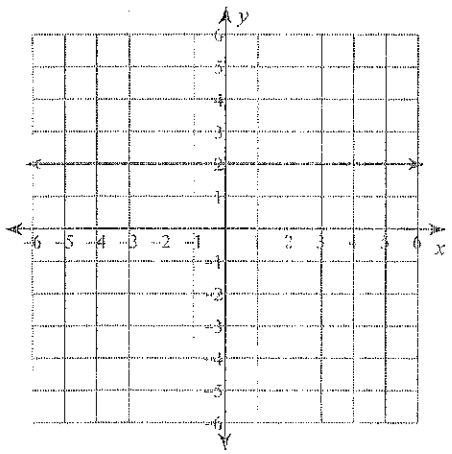
75) x-intercept = -5, y-intercept = -1



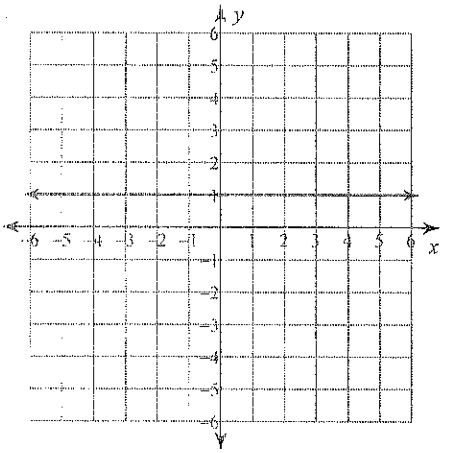
76) x-intercept = 3, y-intercept = -3



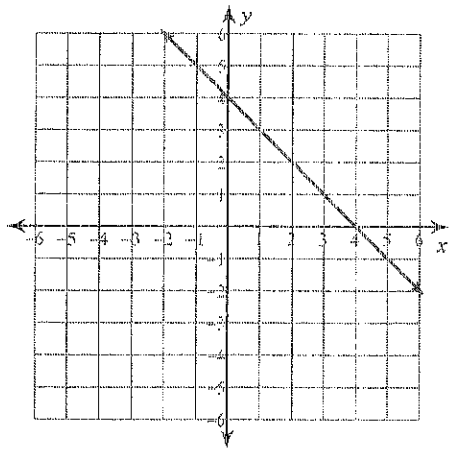
77) $y = 2$



78) $y = 1$



79) $-8 + 2y = -2x$



Write the slope-intercept form of the equation of each line given the slope and y-intercept.

80) Slope $= -7$, y-intercept $= -5$ $y = -7x - 5$

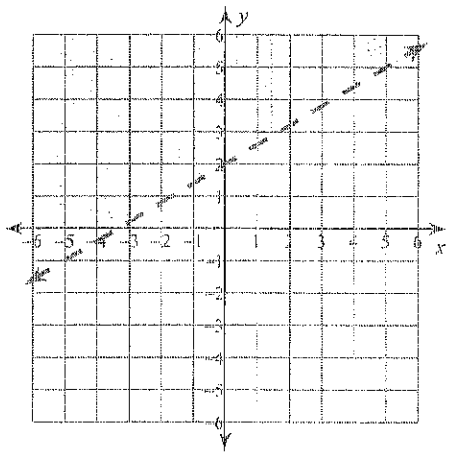
Write the slope-intercept form of the equation of the line through the given point with the given slope.

81) through: $(-5, 2)$, slope $= \frac{2}{5}$ $y = \frac{2}{5}x + 4$

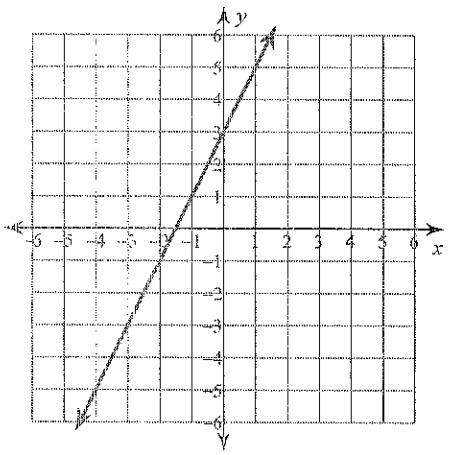
82) through: $(-1, -5)$, slope $= 7$ $y = 7x + 2$

Sketch the graph of each linear inequality.

83) $y > \frac{3}{5}x + 2$



84) $2x - y \geq -3$



Solve each system by graphing.

85) $y = \frac{3}{4}x + 4$ $(-4, 1)$
$y = -x - 3$

86) $y = -4x - 4$ $(-2, 4)$
$y = -x + 2$

Solve each system by elimination.

87) $x + 6y = -7$ $(-1, -1)$
$5x - 6y = 1$

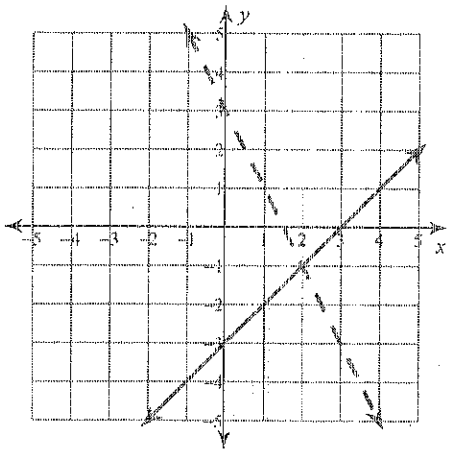
88) $-2x + 8y = 4$ $(2, 1)$
$6x + 16y = 28$

Solve each system by substitution.

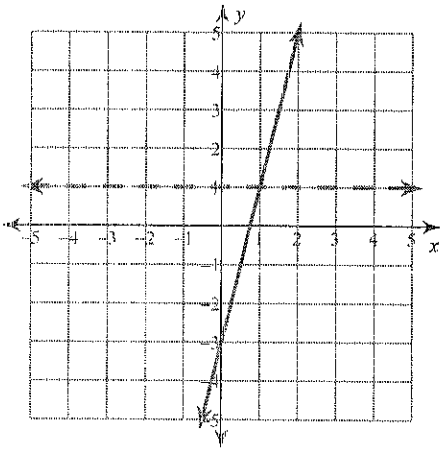
89) $-x + y = -2$ $(6, 4)$
$5x - 7y = 2$

Sketch the solution to each system of inequalities.

90) $y \le x - 3$
$y < -2x + 3$



91) $y \ge 4x - 3$
$y > 1$



Simplify. Your answer should contain only positive exponents.

92) $3b^2 \cdot b \cdot 3b^3$

93) $2m \cdot -2m^5 \cdot \left(-m^2n^{-4}\right)^0$ $-4m^6$

94) $\left(x^{-2}y^5\right)^3 \cdot x^2y^{-3}$ $\dfrac{y^{12}}{x^4}$

95) $\dfrac{2u^2v^{-1}}{-2u^{-4}v^{-2} \cdot (2v)^3}$ $-\dfrac{u^6}{8v^2}$

96) $\dfrac{x^3y^3 \cdot x^{-1}}{-x^3y^4 \cdot \left(-2xy^4\right)^3}$ $\dfrac{1}{8x^4y^{13}}$

Write each number in standard notation.

97) 9.86×10^{-2} 0.0986

98) 7.8×10^2 780

Write each number in scientific notation.

99) 6100000 6.1×10^6

100) 0.00083 8.3×10^{-4}