Algebra 2 Name_____

Summer Packet

Date_____ Period____

Evaluate each using the values given.

1) $h - |j|$; use $h = -5$, and $j = -1$

2) $q - (r + q)$; use $q = 4$, and $r = 3$

3) $p + n^2$; use $n = \frac{4}{3}$, and $p = 1$

4) $|yz|$; use $y = \frac{1}{3}$, and $z = 2$

Simplify each expression.

5) $3v + v$

6) $5 + 7v + 6$

7) $-\frac{5}{2}x + \frac{31}{9}x$

8) $\frac{25}{8}x + \frac{7}{5} + \frac{5}{2}x$

9) $-5(-8v - 6) + 2$

10) $-9 - (6v + 1)$

11) $-7(-9r + 1) - 3(-r - 7)$

12) $-(6n - 1) - 10(2n - 5)$

13) $-2k - \frac{1}{2}\left(\frac{5}{3}k + \frac{9}{7}\right)$

Solve each equation.

14) $-17 = n - 7$

15) $-13p = 195$

16) $-18 = k - 3$

17) $x - \frac{5}{2} = -\frac{175}{8}$

18) $-\frac{372}{55} = -\frac{12}{11}n$

19) $6(1 + 8x) - 6 = 144$

20) $-3(1 + 6x) = 87$

21) $4(m - 1) - 5m = 28 + 3m$

22) $-5(p + 1) = -17 - 2p$

23) $-1 - (1 - 7x) = 7(x + 1)$

24) $6(-2n + 5) = 2(-1 - 4n)$

25) $-\frac{7}{2}\left(-6a - \frac{14}{5}\right) = \frac{833}{10}$

26) $\frac{543}{7} = 6\left(-\frac{3}{2}k + \frac{17}{7}\right)$

Solve each proportion.

27) $\frac{4}{k} = \frac{6}{3}$

28) $\frac{k+6}{2} = \frac{4}{9}$

29) $\frac{x-10}{3} = \frac{3}{6}$

30) $\frac{n}{n-4} = \frac{5}{6}$

31) $\frac{6}{7} = \frac{r}{r+6}$

32) $\frac{10}{n-6} = \frac{9}{n+1}$

Find each product.

33) $2m(6m-7)$

34) $4v(2v+6)$

35) $(3x+7)(-3x+4)$

36) $(-3n-7)(8n-5)$

Factor the common factor out of each expression.

37) $80x^2 + 72x$

38) $-9n^2 - 24n^3$

Factor each completely.

39) $v^2 - 10v$

40) $x^2 - 9x - 10$

41) $x^2 - 4$

42) $16p^2 - 9$

43) $3x^2 - 13x - 10$

44) $5k^2 - 58k + 80$

Solve each equation by factoring.

45) $n^2 - 10n + 21 = 0$

46) $r^2 + 3r - 4 = 0$

47) $n^2 + 8n = -12$

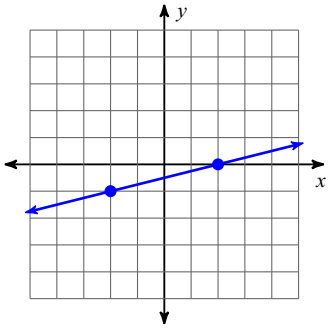
48) $a^2 - 8 = -7a$

49) $x^2 + 4x + 2 = -1$

50) $-6x^2 + x - 48 = -6 - 7x^2$

Find the slope of each line.

51)



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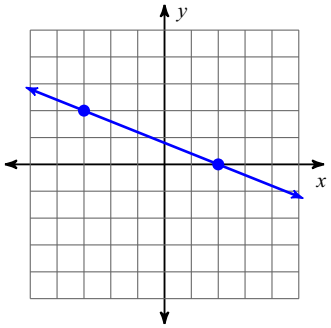


Find the slope of the line through each pair of points.

53) $(-5, 20), (7, 9)$

54) $(7, 17), (8, 3)$

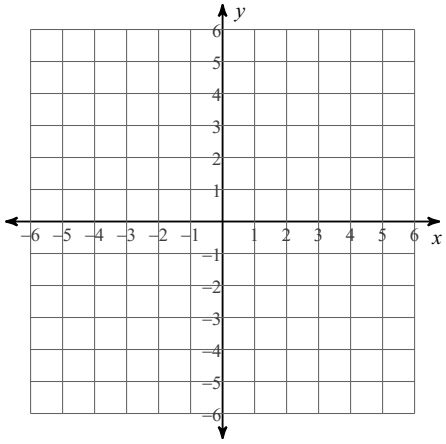
Find the slope of each line.

55) $y = -\frac{2}{5}x + 3$

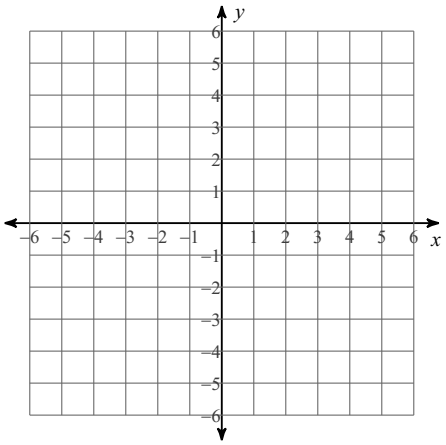
56) $y = -1$

Sketch the graph of each line.

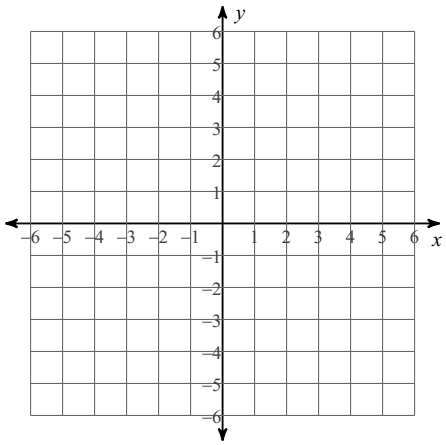
57) $y = x + 4$



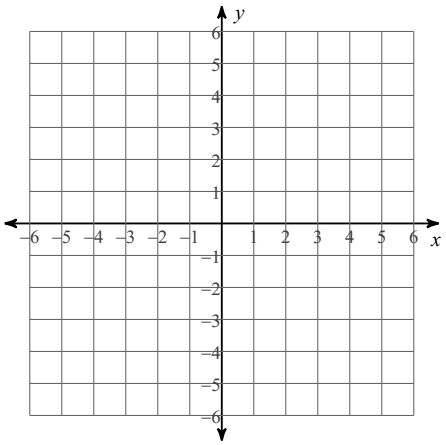
58) $y = -\frac{1}{2}x + 2$



59) $8x - y = -4$

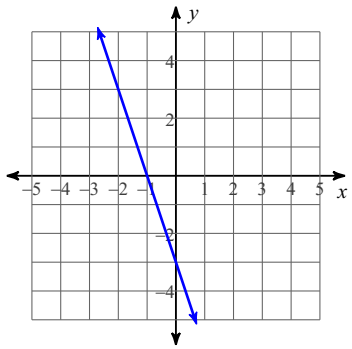


60) $x = 1$



Write the slope-intercept form of the equation of each line.

61)



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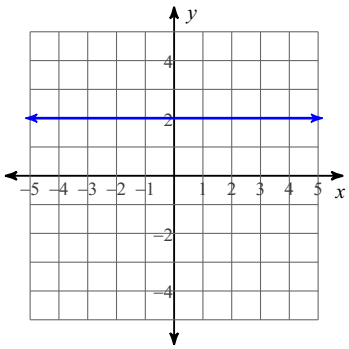


Write the slope-intercept form of the equation of each line given the slope and y-intercept.

63) Slope = –4, y-intercept = 0

64) Slope = –3, y-intercept = 2

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

65) through: $(-2, 2)$ and $(-5, 3)$

66) through: $(1, 4)$ and $(3, -1)$

Write the slope-intercept form of the equation of the line described.

67) through: $(1, -4)$, parallel to $y = -5$

68) through: $(2, 1)$, perp. to $y = -\frac{1}{2}x - 3$

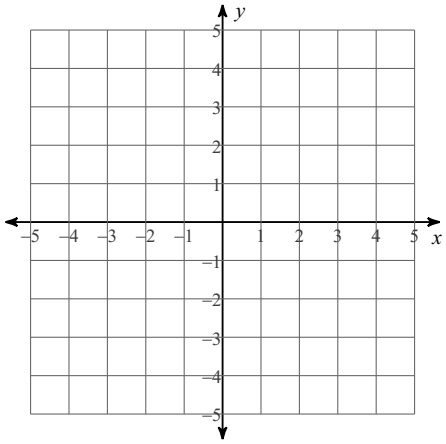
Write the slope-intercept form of the equation of each line.

69) $12x + 7y = 49$

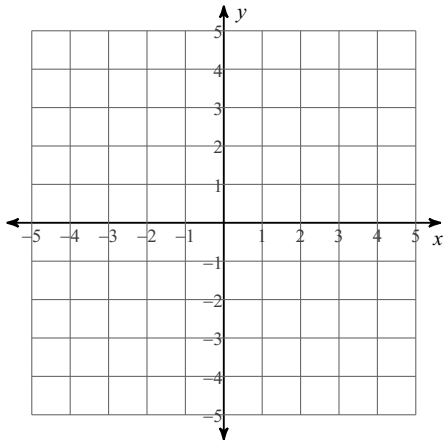
70) $2x - y = 0$

Solve each system by graphing.

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



72) $3x - y = 4$
$x + 2y = 6$



Solve each system by substitution or elimination.

73) $x + y = -4$
$7x - y = -4$

74) $x + 3y = 6$
$x - y = 2$

75) $11x + 8y = 40$
$x - 4y = 32$

76) $2x - y = 7$
$10x + 3y = 27$

Answers to Summer Packet

1) -6

2) -3

3) $\frac{25}{9}$

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

5) $4v$

6) $11 + 7v$

7) $\frac{17}{18}x$

8) $\frac{45}{8}x + \frac{7}{5}$

9) $40v + 32$

10) $-10 - 6v$

11) $66r + 14$

12) $-26n + 51$

13) $-\frac{17}{6}k - \frac{9}{14}$

14) $\{-10\}$

15) $\{-15\}$

16) $\{-15\}$

17) $\left\{-\frac{155}{8}\right\}$

18) $\left\{\frac{31}{5}\right\}$

19) $\{3\}$

20) $\{-5\}$

21) $\{-8\}$

22) $\{4\}$

23) No solution.

24) $\{8\}$

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

26) $\{-7\}$

27) $\{2\}$

28) $\left\{-\frac{46}{9}\right\}$

29) $\left\{\frac{23}{2}\right\}$

30) $\{-20\}$

31) $\{36\}$

32) $\{-64\}$

33) $12m^2 - 14m$

34) $8v^2 + 24v$

35) $-9x^2 - 9x + 28$

36) $-24n^2 - 41n + 35$

37) $8x(10x + 9)$

38) $-3n^2(3 + 8n)$

39) $v(v - 10)$

40) $(x - 10)(x + 1)$

41) $(x + 2)(x - 2)$

42) $(4p + 3)(4p - 3)$

43) $(3x + 2)(x - 5)$

44) $(5k - 8)(k - 10)$

45) $\{7, 3\}$

46) $\{-4, 1\}$

47) $\{-6, -2\}$

48) $\{1, -8\}$

49) $\{-3, -1\}$

50) $\{6, -7\}$

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

52) $-\frac{2}{5}$

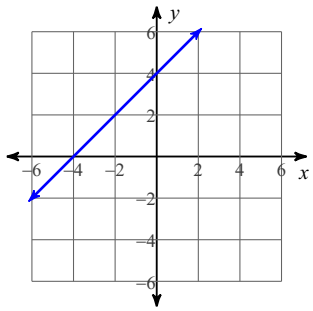
53) $-\frac{11}{12}$

54) -14

55) $-\frac{2}{5}$

56) 0

57)



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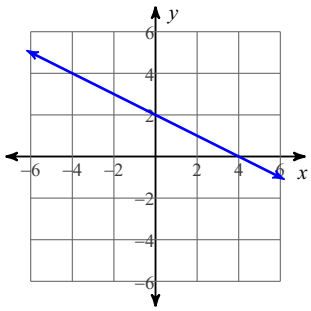

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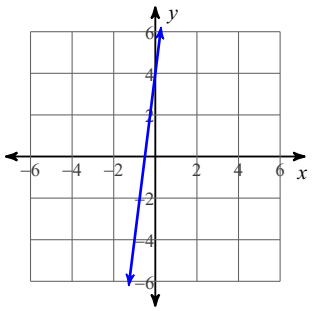

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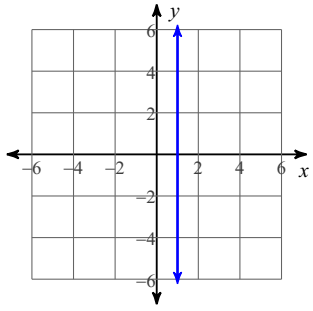

61) $y = -3x - 3$

62) $y = 2$

63) $y = -4x$

64) $y = -3x + 2$

65) $y = -\frac{1}{3}x + \frac{4}{3}$

66) $y = -\frac{5}{2}x + \frac{13}{2}$

67) $y = -4$

68) $y = 2x - 3$

69) $y = -\frac{12}{7}x + 7$

70) $y = 2x$

71) $(2, 2)$

72) $(2, 2)$

73) $(-1, -3)$

74) $(3, 1)$

75) $(8, -6)$

76) $(3, -1)$