

Review for Midterm

Solve each equation.

1) $-385 = -7(-7x - 1)$

3) $\frac{5}{6} - v = v - \frac{5}{3}$

5) $x - 17 = 4(x - 2)$

2) $3(6 + 8x) - 5 = -155$

4) $\frac{1}{4} - \frac{5}{2}r + 1 - 2 = \frac{3}{2}r - \frac{3}{4}$

6) $-15 + x = -(3x + 3)$

$$7) \frac{25}{6} + 2\frac{1}{2}n = \frac{1}{2}\left(n + \frac{7}{3}\right)$$

$$8) \frac{2}{3}\left(-x + \frac{5}{2}\right) = \frac{35}{6} + x$$

Write an equation for each. Then solve.

9) 28 is 44% of what?

10) 17 is what percent of 44?

11) What percent of 47.9 is 1.2?

12) 33 is 96% of what?

Solve the equation for the indicated variable.

13) $5a = -2r - 4d$, for a

14) $-4a = -2p + n$, for a

Solve each inequality and graph its solution.

15) $3(6x + 2) > 78$

16) $-82 \leq 3 - 5(5 - 4n)$

17) $-4x + 4 > -5x + 2(4x - 5)$

18) $5 - 4(-2n + 1) > -14 + 5n$

Solve each compound inequality and graph its solution.

19) $3 + x < -5$ or $-7 - 9x < 29$

20) $7n - 2 \leq -51$ or $6n - 2 > 40$

21) $5 - 10n \geq -65$ and $-1 + 9n > -73$

22) $2p + 3 \geq -15$ and $p + 7 \leq -1$

$$23) -9 \leq -7 + 2r < 3$$

$$24) -27 < 3 + 6n \leq 45$$

Solve each equation.

$$25) \left| -9v + 1 \right| = 1$$

$$26) \left| x - 4 \right| = 2$$

$$27) \left| a + 2 \right| - 9 = -5$$

$$28) -8 + \left| v - 1 \right| = -6$$

Solve each inequality and graph its solution.

29) $|10 - 7v| < 32$

30) $|9 - 6b| > 51$

31) $|8p - 4| > 4$

32) $|-6x - 9| \leq 3$

Evaluate each function. Write your answer using function notation and as an ordered pair.

33) $k(n) = 3n + 5$; Find $k(-10)$

34) $f(a) = |-3a + 1| + 1$; Find $f(2)$

35) $f(t) = -2t^2 - 5$; Find $f(-3)$

36) $h(n) = 3n + 4$; Find $h(-5)$

37) $w(x) = |2x| - 1$; Find $w(1)$

38) $g(t) = t^2 - 1$; Find $g(4)$

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

39) $(-12, -7), (6, -14)$

40) $(12, 0), (-19, -13)$

41) $(7, -12), (-2, -5)$

42) $(6, 3), (-2, 8)$

Find the value of x or y so that the line through the points has the given slope.

43) $(-6, 5)$ and $(x, -5)$; slope: -5

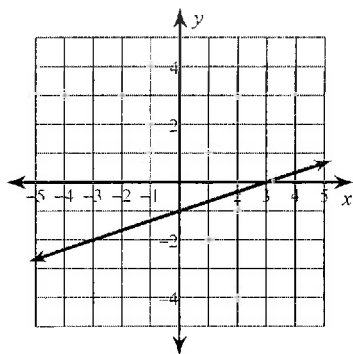
44) $(-3, y)$ and $(3, 8)$; slope: $\frac{5}{2}$

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

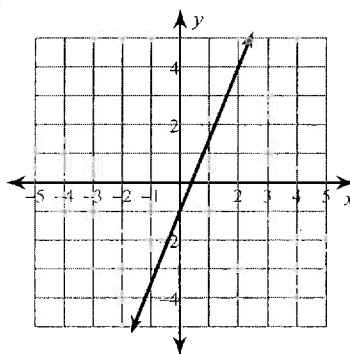
45) $9x + 7y = -35$

46) $6x + y = -2$

47)



48)



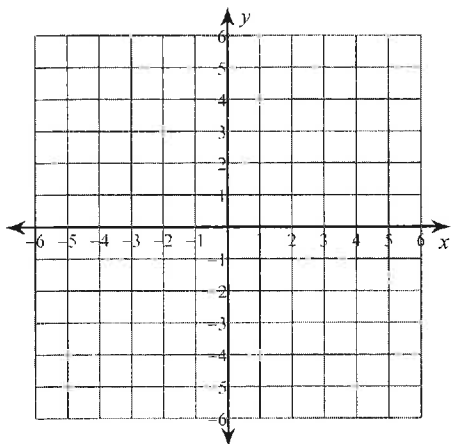
Write the slope-intercept form of the equation of each line given the slope and y-intercept.

49) Slope = $\frac{2}{5}$, y-intercept = 3

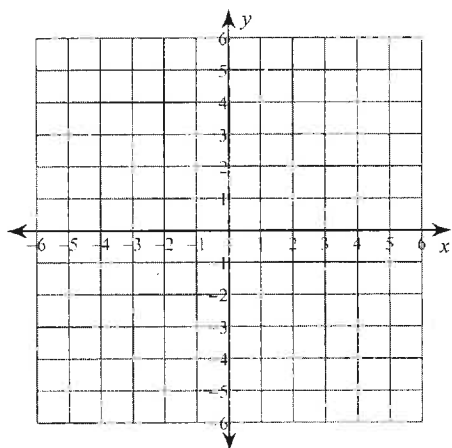
50) Slope = -2 , y-intercept = 3

Sketch the graph of each line.

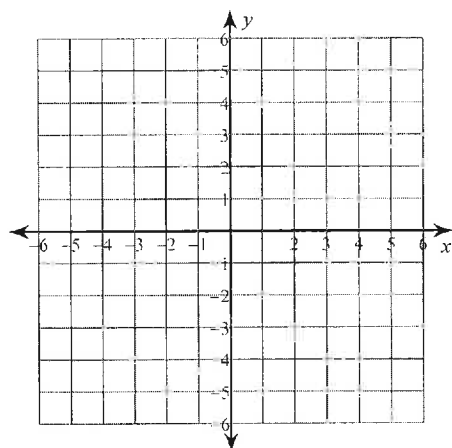
51) $y = 4x + 3$



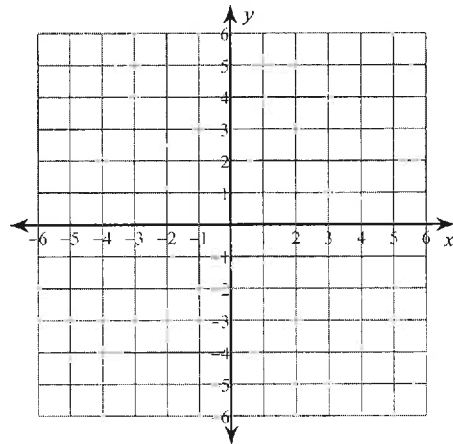
53) $27 + 12x = 9y$



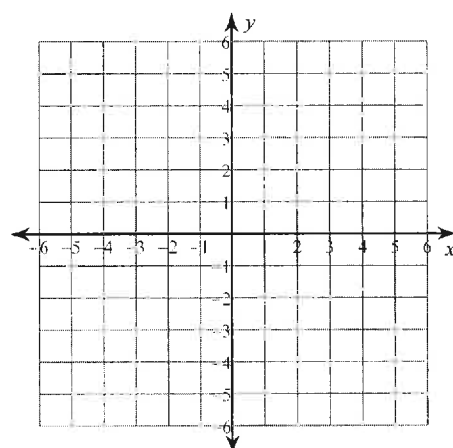
55) $24 = 3x + 12y$



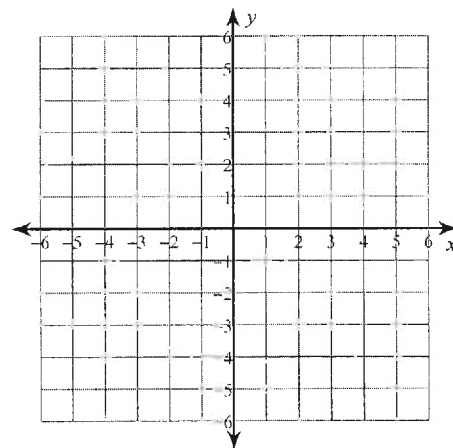
52) $y = -x - 4$



54) $-1 + x = -\frac{1}{3}y$



56) $0 = -y - 2$



Write the standard form of the equation of each line.

57) $-14 + x = 3y$

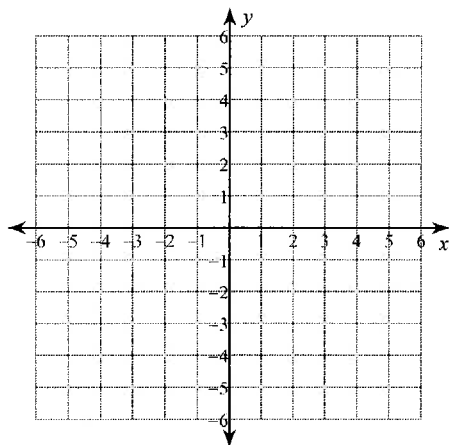
58) $0 = x + \frac{7}{3}y + \frac{26}{3}$

59) $x = -2y - 6$

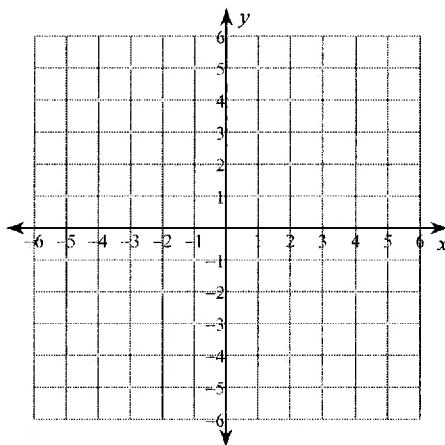
60) $10x + 2y = 10$

Identify the x- & y- intercepts. then use them to sketch the graph of each line.

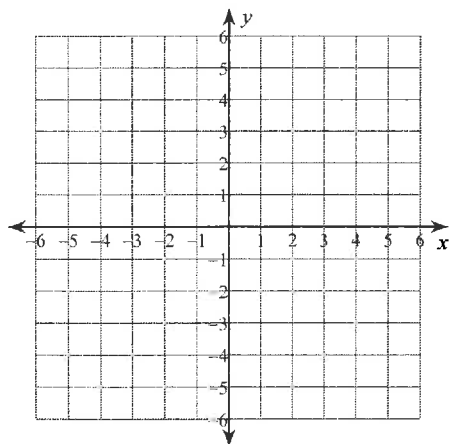
61) $x + y = -3$



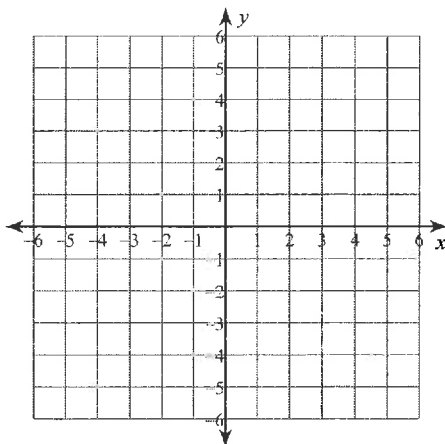
62) $2x + y = 4$



63) $x - y = 2$



64) $2x - 5y = 10$



Use the point-slope form to write the equation for the line.

65) through: $(-3, 1)$, slope $= 4$

66) through: $(5, 4)$, slope $= \frac{9}{5}$

67) through: $(0, 5)$ and $(1, -4)$

68) through: $(5, -2)$ and $(0, -4)$

69) through: $(3, -3)$, parallel to $y = -2x + 2$

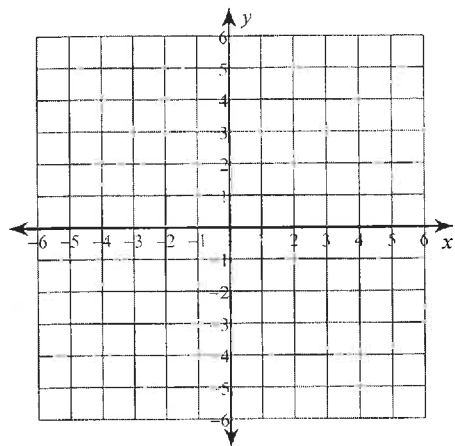
70) through: $(-1, 5)$, parallel to $y = -x - 5$

71) through: $(-1, 1)$, perp. to $y = -1$

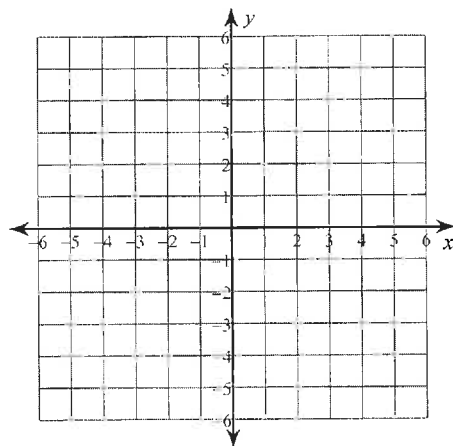
72) through: $(4, 3)$, perp. to $y = -\frac{4}{5}x + 5$

Begin by identifying the vertex, then create a table of values to graph the equation.

73) $y = |x + 2| - 2$

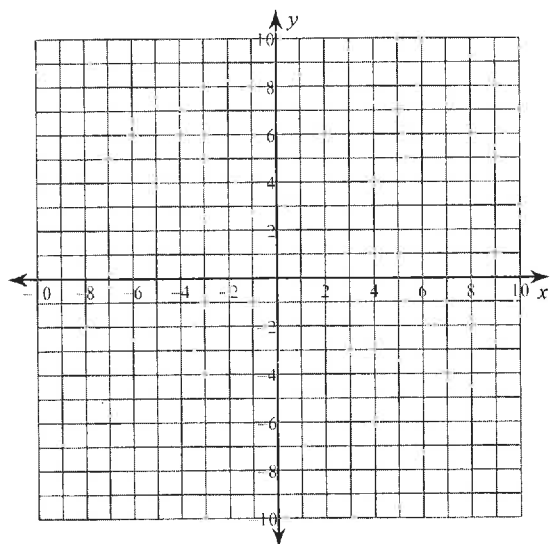


74) $y = |x - 3| - 1$

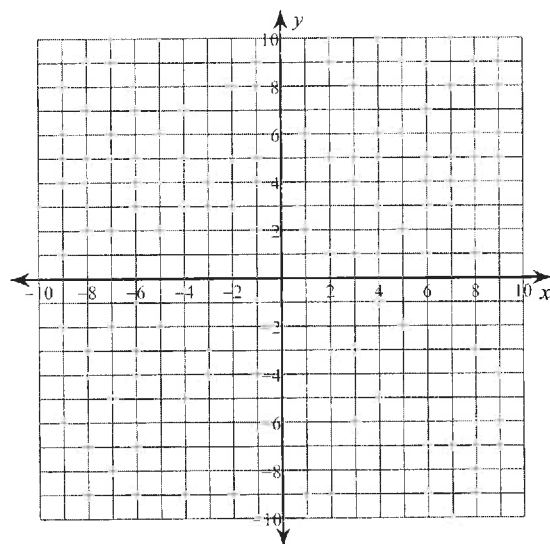


Solve the system by graphing.

75) $y = -x - 9$
 $y = 2x + 6$



76) $y = -\frac{3}{8}x - 3$
 $y = -\frac{3}{2}x + 6$



Solve the system by substitution.

$$\begin{aligned} 77) \quad x + 5y &= 17 \\ 7x + 3y &= -9 \end{aligned}$$

$$\begin{aligned} 78) \quad -4x + 3y &= -16 \\ x + 4y &= -15 \end{aligned}$$

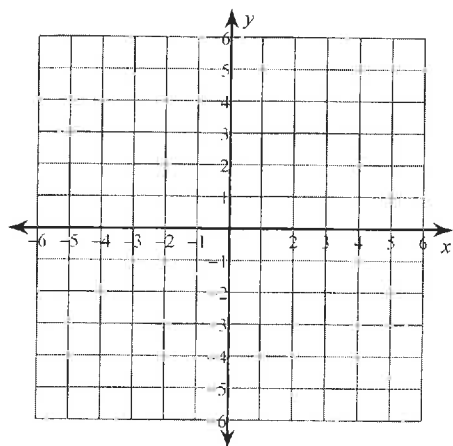
Solve the system by elimination.

$$\begin{aligned} 79) \quad x + y &= -4 \\ 3x + 2y &= -13 \end{aligned}$$

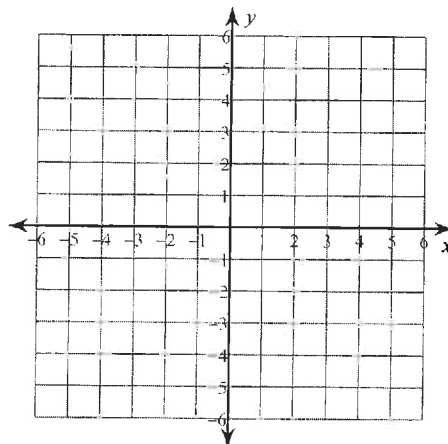
$$\begin{aligned} 80) \quad 8x + 2y &= 6 \\ 16x - 3y &= 19 \end{aligned}$$

Sketch the graph of each linear inequality.

81) $y > \frac{3}{2}x - 5$

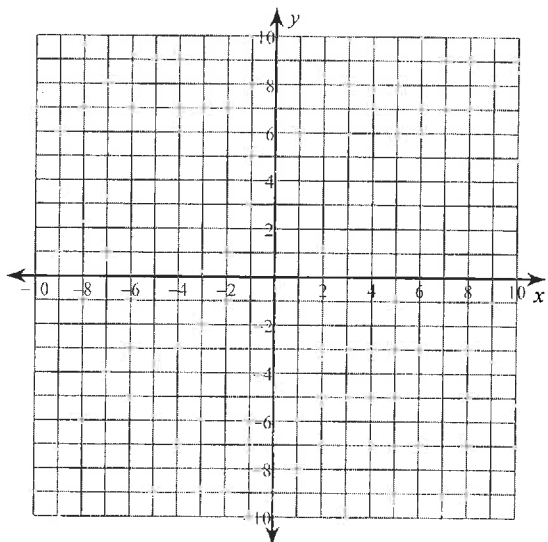


82) $y \geq -4$



Sketch the solution to each system of inequalities.

83) $y > 2x + 8$
 $y \geq -4x + 2$



84) $y > -\frac{5}{2}x + 1$
 $y \leq \frac{3}{2}x - 7$

