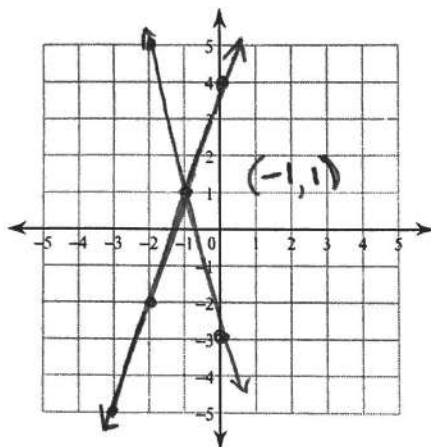


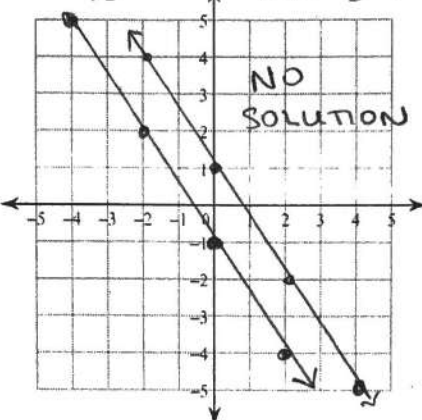
Review Chapter 8

Solve each system by graphing and sketch the graph.

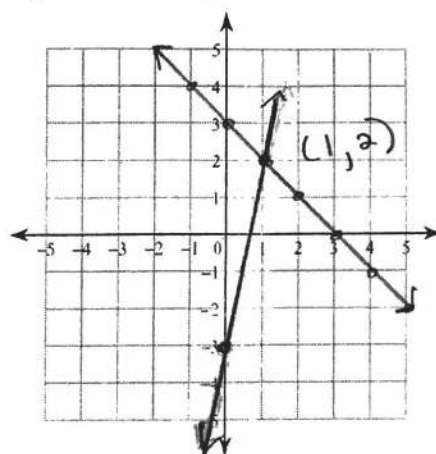
1) $y = 3x + 4$ $m = 3$ $b = 4$
 $y = -4x - 3$ $m = -4$ $b = -3$



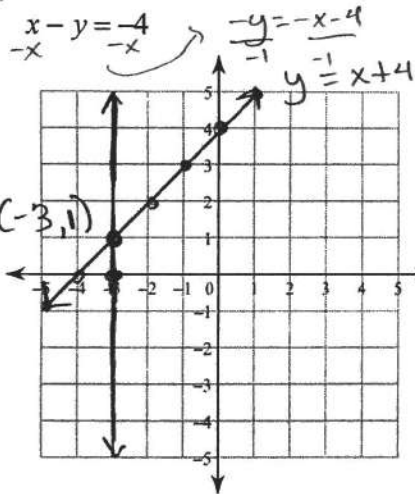
2) $y = -\frac{3}{2}x - 1$ $y = -\frac{3}{2}x + 1$
 $m = -\frac{3}{2}$ $b = -1$ $m = -\frac{3}{2}$ $b = 1$



3) $y = 5x - 3$ $m = 5$ $b = -3$
 $y = -x + 3$ $m = -1$ $b = 3$



4) $x = -3$ $m = \text{undefined}$ $x\text{-int } x = -3$



Solve each system by substitution.

5) $-5x + 2y = 32$

$$\begin{aligned} y &= -3x - 6 \\ -5x + 2(-3x - 6) &= 32 \\ -5x - 6x - 12 &= 32 \\ -11x - 12 &= 32 \\ +12 &+12 \\ -11x &= 44 \\ -11 &-11 \\ x &= -4 \end{aligned}$$

$$\begin{aligned} y &= -3x - 6 \\ y &= -3(-4) - 6 \\ y &= 12 - 6 \\ y &= 6 \end{aligned}$$

$(-4, 6)$

6) $-6x + 12y = -18$

$$\begin{aligned} y &= 11x - 12 \\ -6x + 12(11x - 12) &= -18 \\ -6x + 132x - 144 &= -18 \\ 126x - 144 &= -18 \\ +144 &+144 \\ 126x &= 126 \\ \frac{126x}{126} &= \frac{126}{126} \\ x &= 1 \end{aligned}$$

$$\begin{aligned} y &= 11(1) - 12 \\ y &= 11 - 12 \\ y &= -1 \end{aligned}$$

$(1, -1)$

7) $-22x + 33y = 132$

$x = -y + 34$

$-22(-y + 34) + 33y = 132$

$22y - 748 + 33y = 132$

$55y - 748 = 132$

$+748 \quad +748$

$x = -y + 34$

$x = -(16) + 34$

$x = -16 + 34$

$x = 18$

$(18, 16)$

8) $x = -7 - 3y$

$x + 6y = -10$

$-7 - 3y + 6y = -10$

$-7 + 3y = -10$

$+7 \quad +7$

$\frac{3y}{3} = \frac{-3}{3}$

$y = -1$

$(-4, -1)$

$x = -7 - 3(-1)$

$x = -7 + 3$

$x = -4$

Solve each system by elimination.

$$\begin{array}{r} 9) \quad -4x - y = -12 \\ \quad 4x - 2y = 12 \end{array}$$

$$\begin{array}{r} -3y = 0 \\ -3 \quad -3 \end{array}$$

$$y = 0$$

$$4x - 2y = 12$$

$$4x - 2(0) = 12$$

$$\begin{array}{r} 4x = 12 \\ 4 \quad 4 \end{array}$$

$$x = 3$$

$$\boxed{(3, 0)}$$

$$\begin{array}{r} 10) \quad -3x + 2y = 6 \\ \quad 3x - 4y = -12 \end{array}$$

$$\begin{array}{r} -2y = -6 \\ -2 \quad -2 \end{array}$$

$$y = 3$$

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

$$-3x + 6 = 6$$

$$-3x = 0$$

$$x = 0$$

$$\boxed{(0, 3)}$$

$$\begin{array}{r} 11) \quad 12x + 7y = 15 \\ \quad 2[-6x - y = -15] \end{array}$$

$$-12x - 2y = -30$$

$$12x + 7y = 15$$

$$5y = -15$$

$$y = -3$$

$$12x + 7(-3) = 15$$

$$12x - 21 = 15$$

$$+21 \quad +21$$

$$12x = 36$$

$$x = 3$$

$$\boxed{(3, -3)}$$

$$\begin{array}{r} 12) \quad [-2x + 6y = -6] \cdot -2 \\ \quad [-5x + 4y = 18] \cdot 3 \end{array}$$

$$4x - 12y = 12$$

$$-15x + 12y = 54$$

$$-11x = 66$$

$$-11 \quad -11$$

$$x = -6$$

$$-2x + 6y = -6$$

$$-2(-6) + 6y = -6$$

$$12 + 6y = -6$$

$$-12 \quad -12$$

$$6y = -18$$

$$y = -3$$

$$\boxed{(-6, -3)}$$

Solve each system by graphing, substitution, or elimination.

If appropriate, write "no solution" or "infinitely many solutions."

$$13) \quad -7x + 5y = -21$$

$$[-x + y = -5] \cdot 7$$

$$-7x + 7y = -35$$

$$-7x + 5y = -21$$

$$-2y = 14$$

$$-2 \quad -2$$

$$y = -7$$

$$-x - 7 = -5$$

$$+7 \quad +7$$

$$\boxed{(-2, -7)}$$

$$-x = 2$$

$$-1 \quad -1$$

$$x = -2$$

$$15) \quad [x + 3y = -3] \cdot -3$$

$$3x + 9y = -9$$

$$-3x - 4y = 9$$

$$0 = 0$$

$$\boxed{\text{infinite solutions}}$$

$$14) \quad (-5x + y = 8) \cdot 3$$

$$15x - 3y = 24$$

$$-15x + 3y = 24$$

$$0 \neq 24$$

$$\boxed{\text{no solution}}$$

$$16) \quad 8x - 4y = 0$$

$$[-x + y = 5] \cdot 4$$

$$-4x + 4y = 20$$

$$8x - 4y = 0$$

$$4x = 20$$

$$x = 5$$

$$-x + y = 5$$

$$-5 + y = 5$$

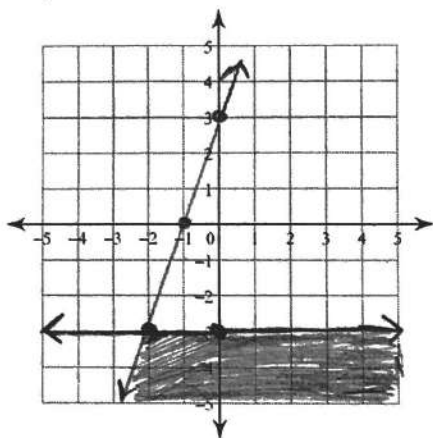
$$+5 \quad +5$$

$$y = 10$$

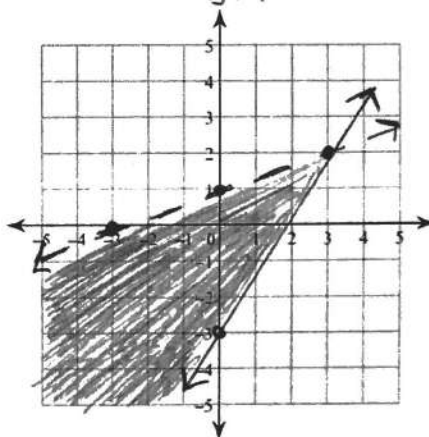
$$\boxed{(5, 10)}$$

Sketch the solution to each system of inequalities.

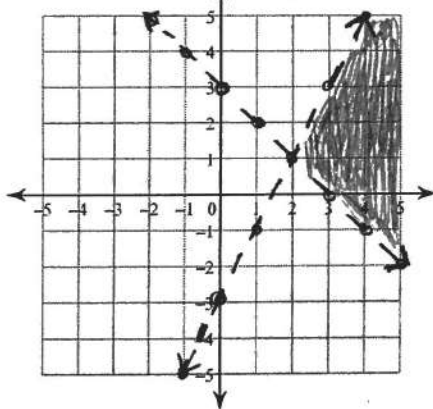
17) $y \leq -3$ $m=0$ $b=-3$ $\leftrightarrow$
 $y \leq 3x+3$ $m=3$ $b=3$ $\leftrightarrow$



18) $y \geq \frac{5}{3}x - 3$ $m=\frac{5}{3}$ $b=-3$ $\leftrightarrow$
 $y < \frac{1}{3}x + 1$ $m=\frac{1}{3}$ $b=1$ $\leftarrow \text{---} \rightarrow$



19) $x+y > 3$
 $2x-y > 3$ $\leftrightarrow$
 $y > -x+3$ $m=-1$ $b=3$
 $y < 2x-3$ $m=2$ $b=-3$ $\leftarrow \text{---} \rightarrow$



20) Is the point (2, 1) a solution to the system of inequalities in number 19?

NO