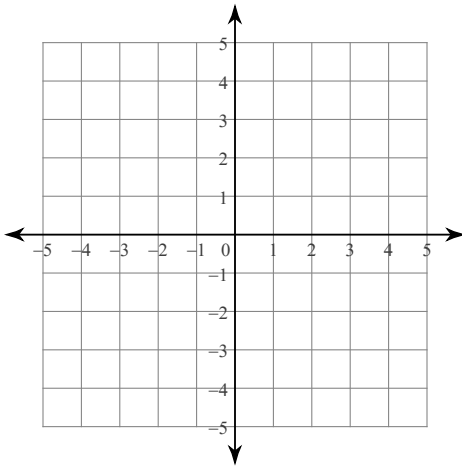


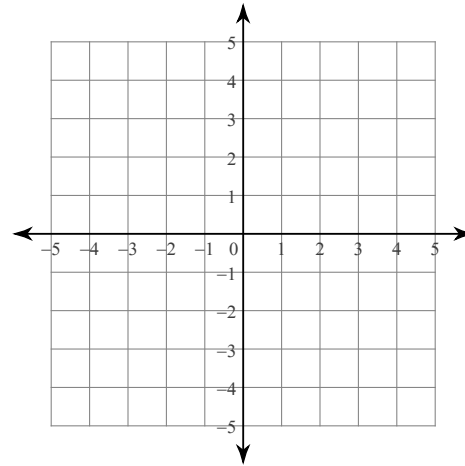
Review Chapter :

Solve each system by graphing and sketch the graph.

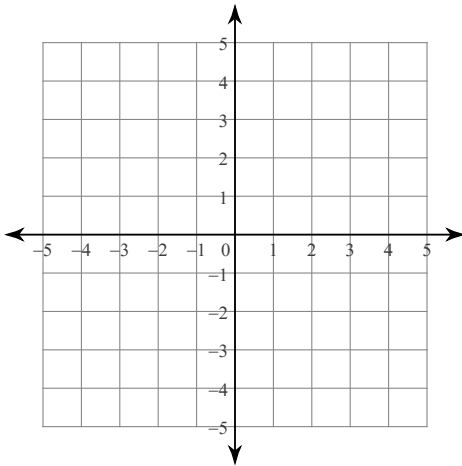
$$1) \begin{aligned} y &= 3x + 4 \\ y &= -4x - 3 \end{aligned}$$



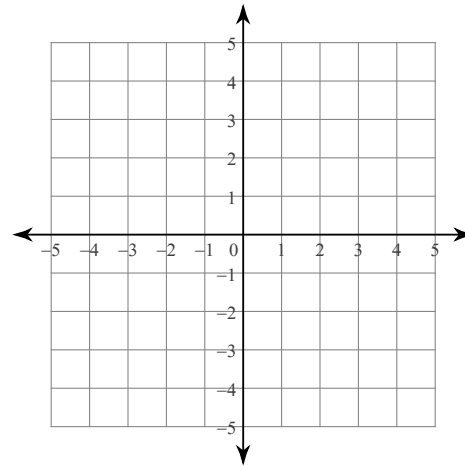
$$2) \begin{aligned} y &= -\frac{3}{2}x - 1 \\ y &= -\frac{3}{2}x + 1 \end{aligned}$$



$$3) \begin{aligned} y &= 5x - 3 \\ y &= -x + 3 \end{aligned}$$



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



Solve each system by substitution.

$$\begin{aligned} 5) \quad & -5x + 2y = 32 \\ & y = -3x - 6 \end{aligned}$$

$$\begin{aligned} 6) \quad & -6x + 12y = -18 \\ & y = 11x - 12 \end{aligned}$$

$$\begin{aligned} 7) \quad & -22x + 33y = 132 \\ & x = -y + 34 \end{aligned}$$

$$\begin{aligned} 8) \quad & x = -7 - 3y \\ & x + 6y = -10 \end{aligned}$$

Solve each system by elimination.

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

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

$$\begin{aligned} 11) \quad & 12x + 7y = 15 \\ & -6x - y = -15 \end{aligned}$$

$$\begin{aligned} 12) \quad & -2x + 6y = -6 \\ & -5x + 4y = 18 \end{aligned}$$

Solve each system by graphing, substitution, or elimination. If appropriate, write "no solution" or "infinitely many solutions."

$$\begin{aligned} 13) \quad & -7x + 5y = -21 \\ & -x + y = -5 \end{aligned}$$

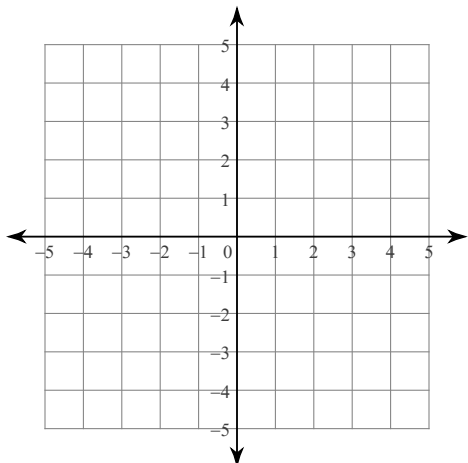
$$\begin{aligned} 14) \quad & -5x + y = 8 \\ & 15x - 3y = 5 \end{aligned}$$

$$\begin{aligned} 15) \quad & x + 3y = -31 \\ & 3x + 9y = -93 \end{aligned}$$

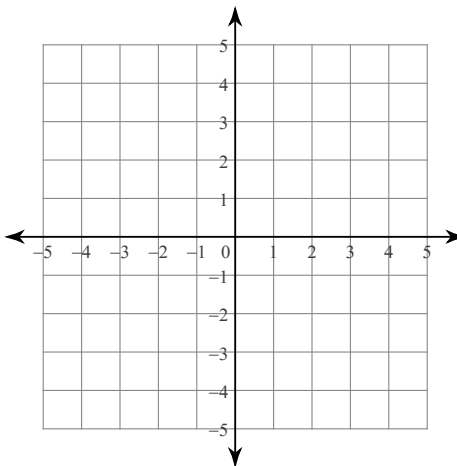
$$\begin{aligned} 16) \quad & 8x - 4y = 0 \\ & -x + y = 5 \end{aligned}$$

Sketch the solution to each system of inequalities.

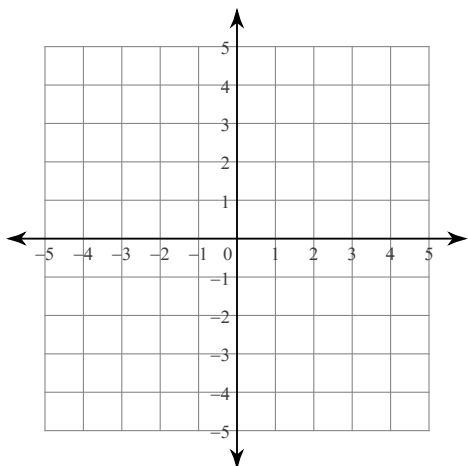
17) $y \leq -3$
 $y \leq 3x + 3$



18) $y \geq \frac{5}{3}x - 3$
 $y < \frac{1}{3}x + 1$



19) $x + y > 3$
 $2x - y > 3$



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

Review Application and Extension

Use a system of linear inequalities to solve each problem. (Use a separate sheet for more room.)

1. You have a money jar containing nickels and quarters worth \$1.55. The money jar contains 11 coins. How many of each coin do you have?

a. Complete the following:

$$\underline{\quad\quad} + \underline{\quad\quad} = 11 \quad \text{(Representing the number of coins)}$$

$$0.05\underline{\quad\quad} + 0.25\underline{\quad\quad} = \$1.55 \quad \text{(Representing the value of the coins)}$$

b. Now solve your system to answer the question!

2. It's time for an AlgeParty! Brust goes out and buys three rolls of streamers and fifteen party hats for \$30. Sully buys two rolls of streamers and 4 party hats for eleven dollars at the same store. Find the cost of streamers and the cost of party hats by solving a system of linear equations. (Hint: write one equation for Brust and one for Sully)
3. An amusement park charges an admission fee plus a fee for each ride you go on. Admission plus two rides costs ten dollars. Admission plus five rides costs sixteen dollars. Find the cost of admission and the cost of a ride.
4. A clothing manufacturer wants to produce denim jeans and denim jackets. Each pair of jeans requires two yards of denim and takes 0.25 hr to make. Each jacket requires 3 yards of denim and takes 0.5 hr to make. The manufacturer has 800 yards of denim and 120 hours to spend making jeans and jackets.

Let $x = \# \text{ of pairs of jeans}$ and $y = \# \text{ pairs of jackets}$.

a. Explain each inequality in the context of this problem.

$$x = \# \text{ of pairs of jeans} \quad y = \# \text{ of jackets}$$

$$2x + 3y \leq 800 \quad \underline{\hspace{15em}}$$

$$0.25x + 0.5y \leq 120 \quad \underline{\hspace{15em}}$$

$$x \geq 0 \quad \underline{\hspace{15em}}$$

$$y \geq 0 \quad \underline{\hspace{15em}}$$