

**Concept and Vocabulary:**

1. The ordered pair (5,4) is a/an \_\_\_\_\_ of the inequality  $x + y > 2$  because when 5 is substituted for \_\_\_\_\_ and 4 is substituted for \_\_\_\_\_, the true statement \_\_\_\_\_ is obtained.
2. The set of all points that satisfy an inequality is called the \_\_\_\_\_ of the inequality.
3. The set of all points on one side of a line is called a/an \_\_\_\_\_.
4. True or false: The graph  $5x - 3y > 15$  includes the line  $5x - 3y = 15$ . \_\_\_\_\_
5. True or false: The graph of the linear equation  $5x - 3y = 15$  is used to graph the linear inequality  $5x - 3y > 15$ . \_\_\_\_\_
6. True or false: When graphing  $5x - 3y > 15$ , to determine which side of the line to shade, choose a test point on  $5x - 3y = 15$ . \_\_\_\_\_

**Practice Exercises:**

In exercises 1 - 7 odd, determine whether each ordered pair is a solution of the given inequality.

1.  $x + y > 4$  (2,2), (3,2), (-3,8)

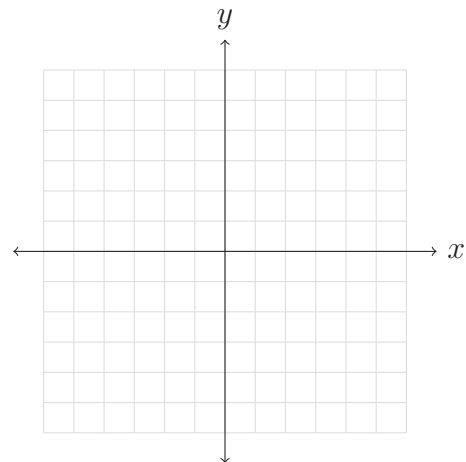
3.  $2x + y \geq 5$  (4,0), (1,3), (0,0)

5.  $y \geq -2x + 4$  (4,0), (1,3), (-2,-4)

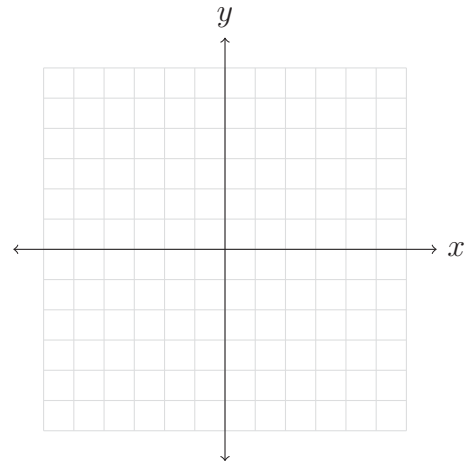
7.  $y > -2x + 1$  (2,3), (0,0), (0,5)

In exercises 9 - 35 odd, graph each inequality. Label the intercepts.

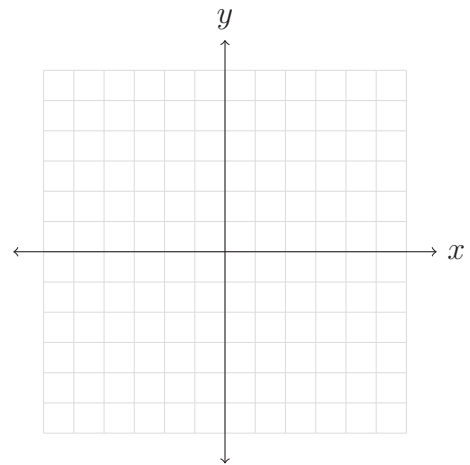
9.  $x + y \geq 3$



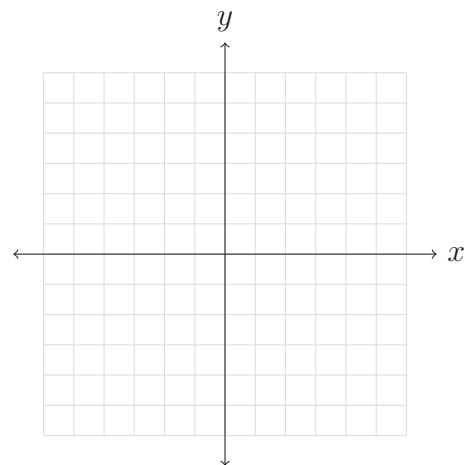
11.  $x - y < 5$



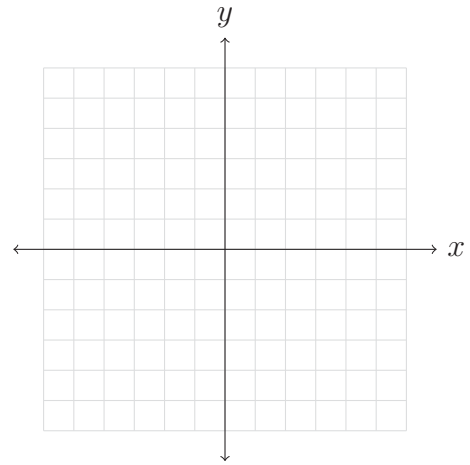
13.  $x + 2y > 4$



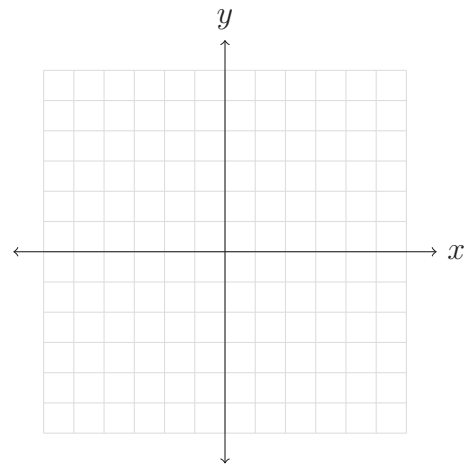
15.  $3x - y \leq 6$



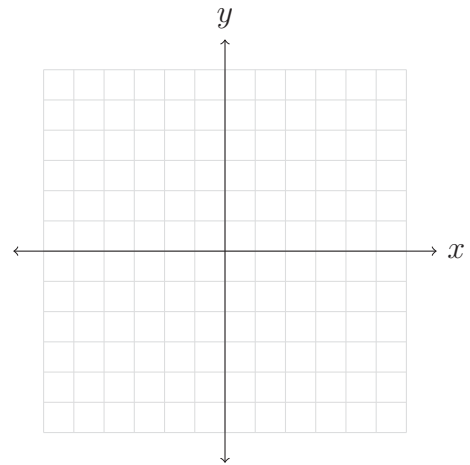
17.  $3x - 2y \leq 8$



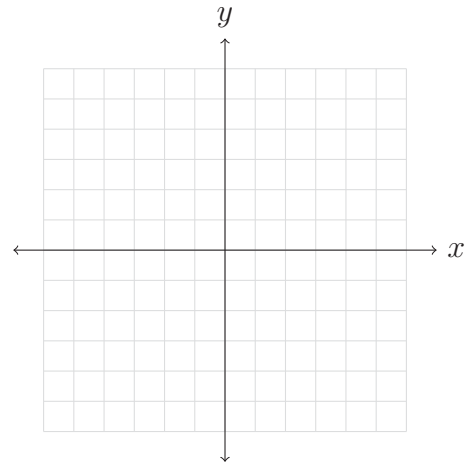
19.  $4x + 3y > 15$



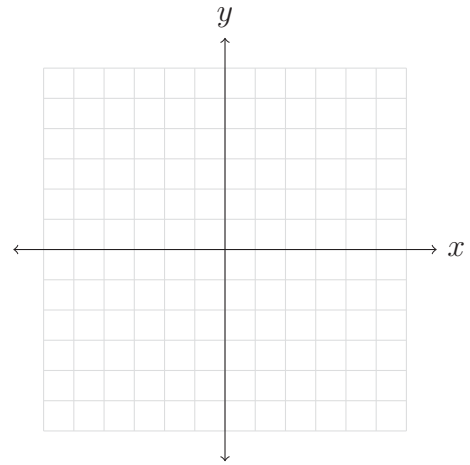
21.  $5x - y < -7$



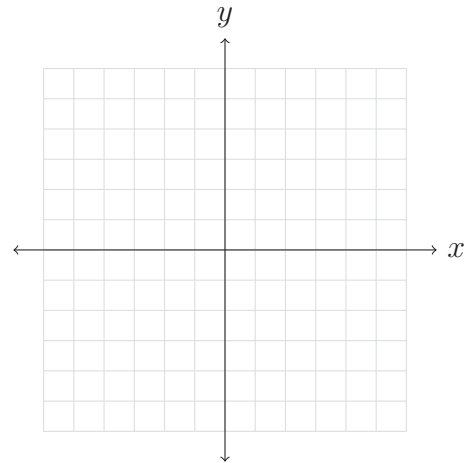
23.  $y \leq \frac{1}{3}x$



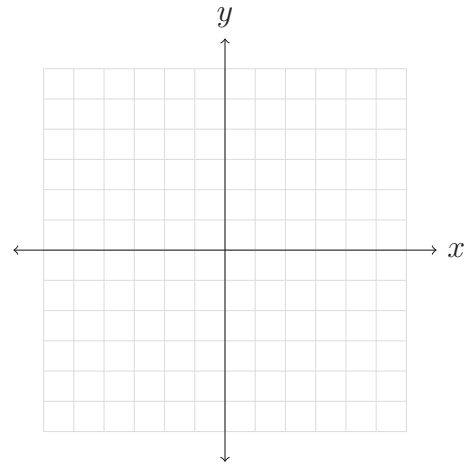
25.  $y > 2x$



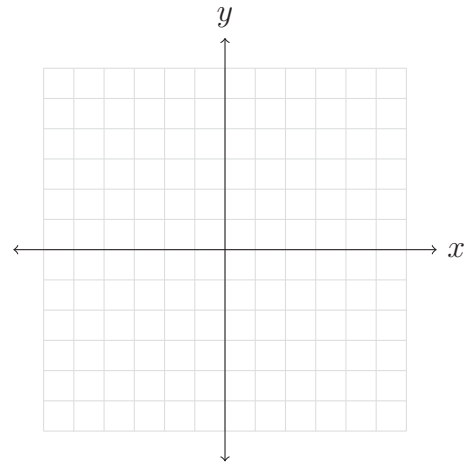
27.  $y > 3x + 2$



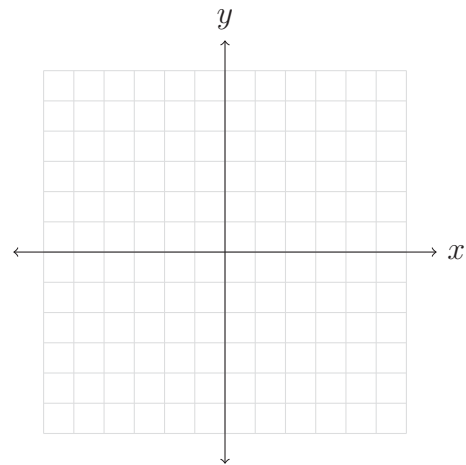
29.  $y < \frac{3}{4}x - 3$



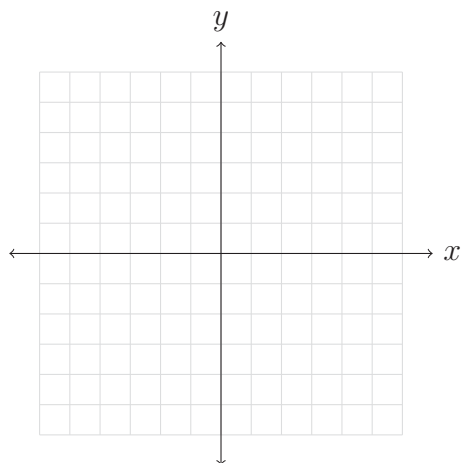
31.  $x \leq 1$



33.  $y > 1$

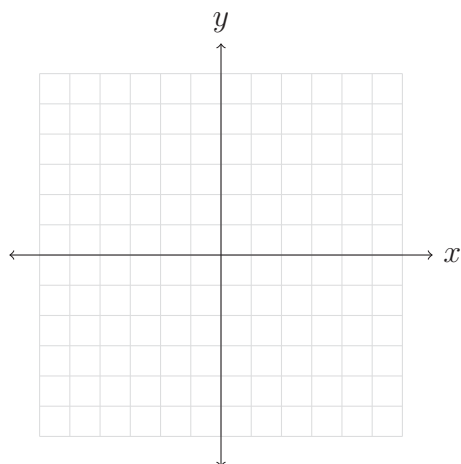


35.  $x \geq 0$

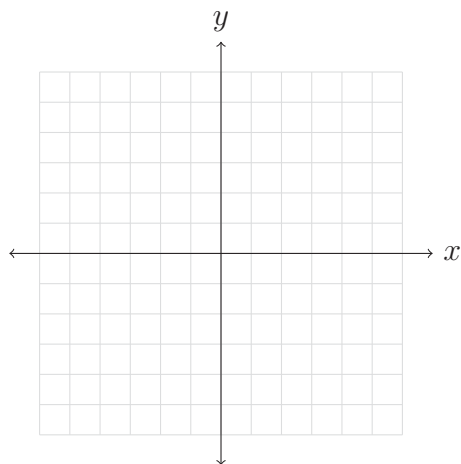


In exercises 37 - 43 odd, write each sentence as a linear inequality in two variables and then graph the inequality.

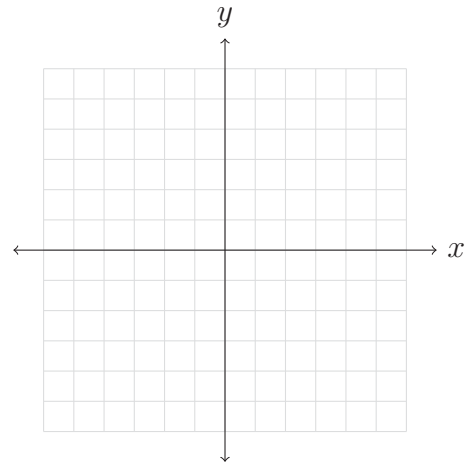
37. The sum of the  $x$ -variable and the  $y$ -variable is at least 2.



39. The difference between 5 times the  $x$ -variable and 2 times the  $y$ -variable is at most 10.



41. The  $y$ -variable is no less than  $\frac{1}{2}$  of the  $x$ -variable.



43. The  $y$ -variable is no more than  $-1$ .

