| Equation	y = 2x − 5	y > 2x − 5	y < 2x - 5	y ≥ 2x - 5	y ≤ 2x - 5
The equation is saying...	The points on the line	The points above the line	The points below the line	The points on and above the line	The points on and below the line
The graph looks like...					

4.4 Linear Inequalities in Two Variables

Name:_____

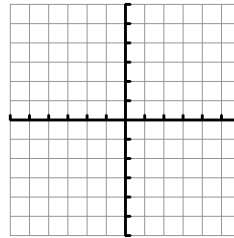Linear Inequality in Two Variables – like a linear equation but uses an inequality sign.
Solution of a Linear Inequality in Two Variables – all ordered pairs (x, y) that make the inequality true (a point in the shaded region)

EXAMPLE First, graph the inequality. Then name an ordered pair that is a solution to the linear inequalities.
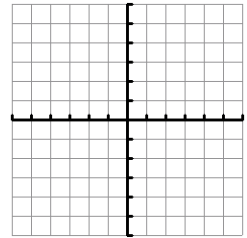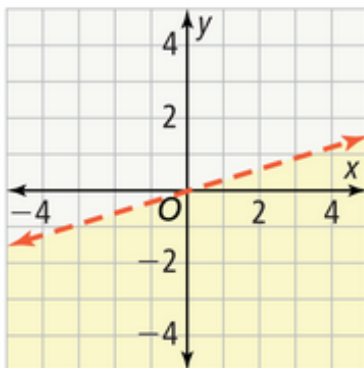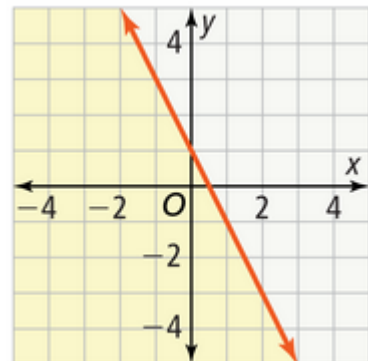
a) $3x + y < 5$
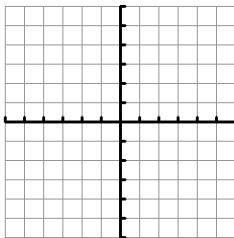
b) $x \geq 3$

c) $y < 2$

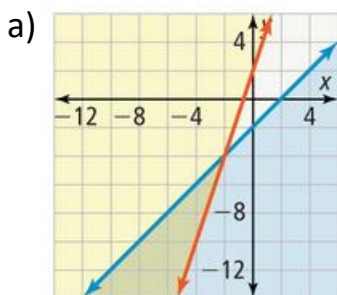**Try It!** Write the inequality represented by the graph.

a)

b)

Try It! Write a System of Inequalities from a Graph
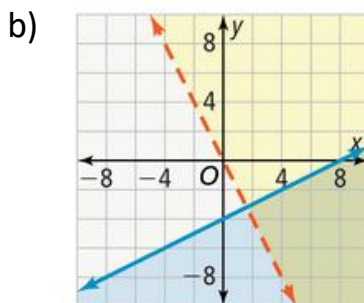
a)

b)

EXAMPLE Graph each system of inequalities. Then name a solution point.

a) $\begin{cases} x - y < 2 \\ x + y \le 1 \end{cases}$

b) $\begin{cases} -5x + 2y > -4 \\ y > -x + 2 \end{cases}$

c) $\begin{cases} y < 2x \\ y > -3 \end{cases}$
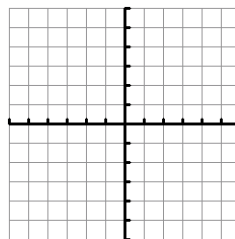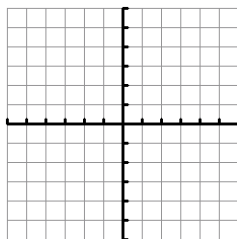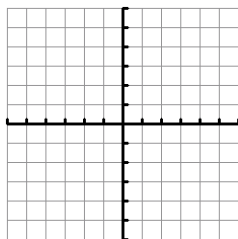
EXAMPLE Malia has $500 to purchase water bottles and pairs of socks for a fundraiser for her school's cross-country team. She needs to buy a total of at least 200 items without buying too many of just one item. What graph shows the possible number of water bottles and pairs of socks that Malia can buy?

$2

$3