

Name _____

8A; Algebra 1

Date _____

Period _____

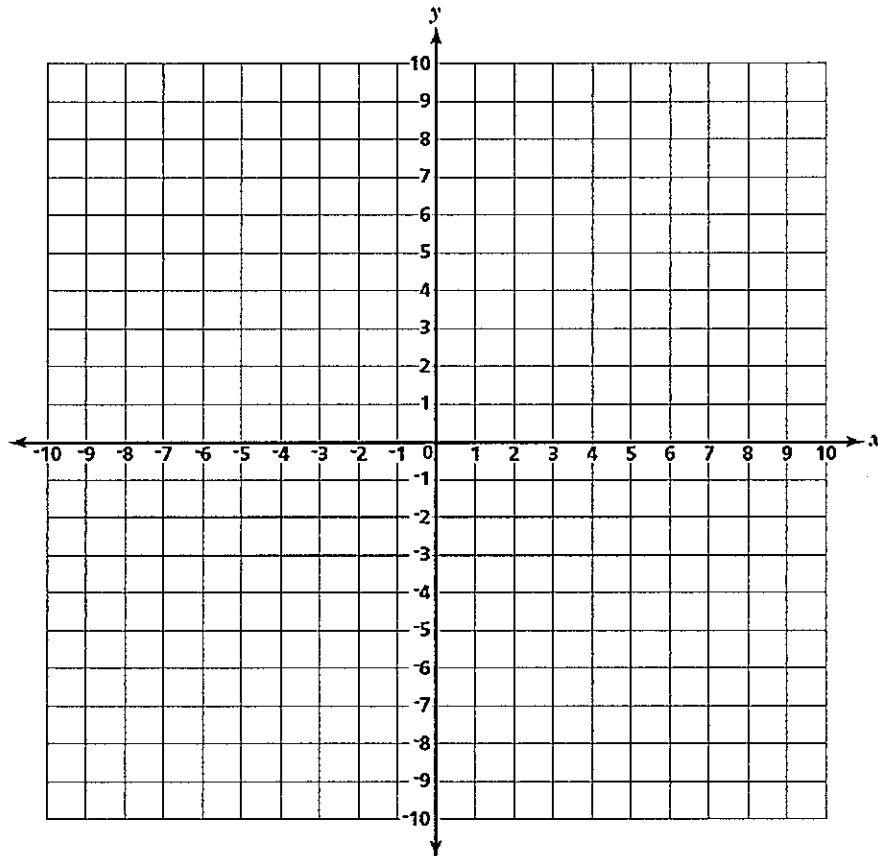
How do we solve a System of Inequalities Graphically?

In order to find the solution set of a system of inequalities, we must find the ordered pairs that satisfy the open sentences of the system. We do this by a graphic method that is similar to the method used in finding the solution set of a system of equations.

Example 1:

(a) Graph the following system of inequalities and label the solution set S.

$$\begin{aligned}x + y &\geq 4 \\ y &\leq 2x - 3\end{aligned}$$



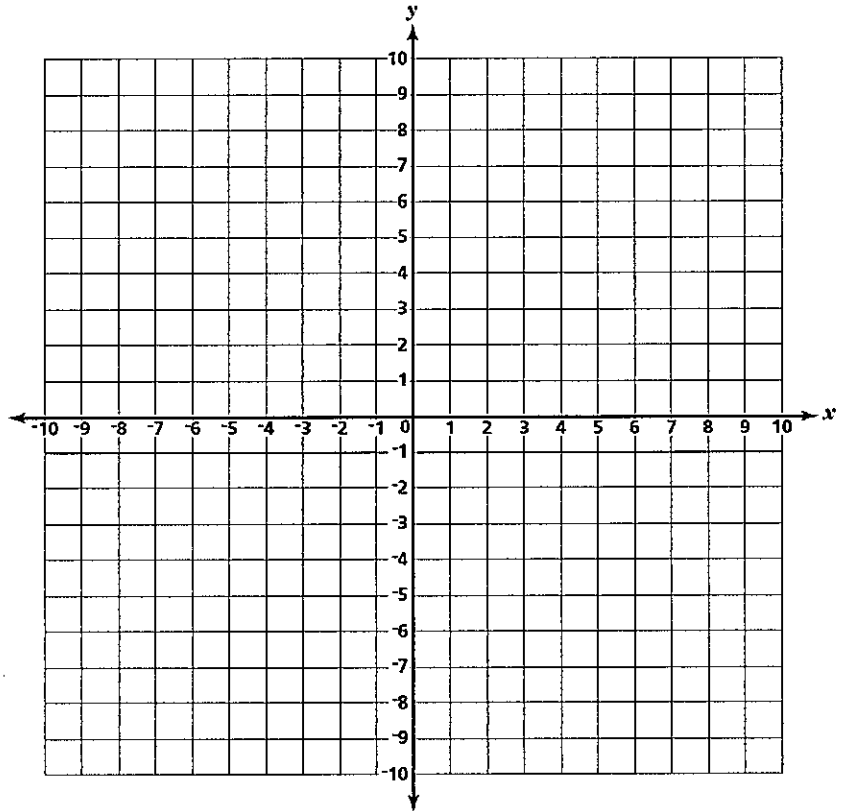
- (b) Name a point in the solution set of $x + y \geq 4$ and $y \leq 2x - 3$. _____.
- (c) Name a point in the solution set of $x + y \geq 4$ but not in the solution set of $y \leq 2x - 3$. _____
- (d) Name a point in the solution set of $y \leq 2x - 3$ but not in the solution set of $x + y \geq 4$. _____
- (e) Name a point that is not in the solution set of $x + y \geq 4$ nor in the solution set of $y \leq 2x - 3$. _____

Example 2:

Graph the solution set of the system:

$$x > 2$$

$$y < -2$$

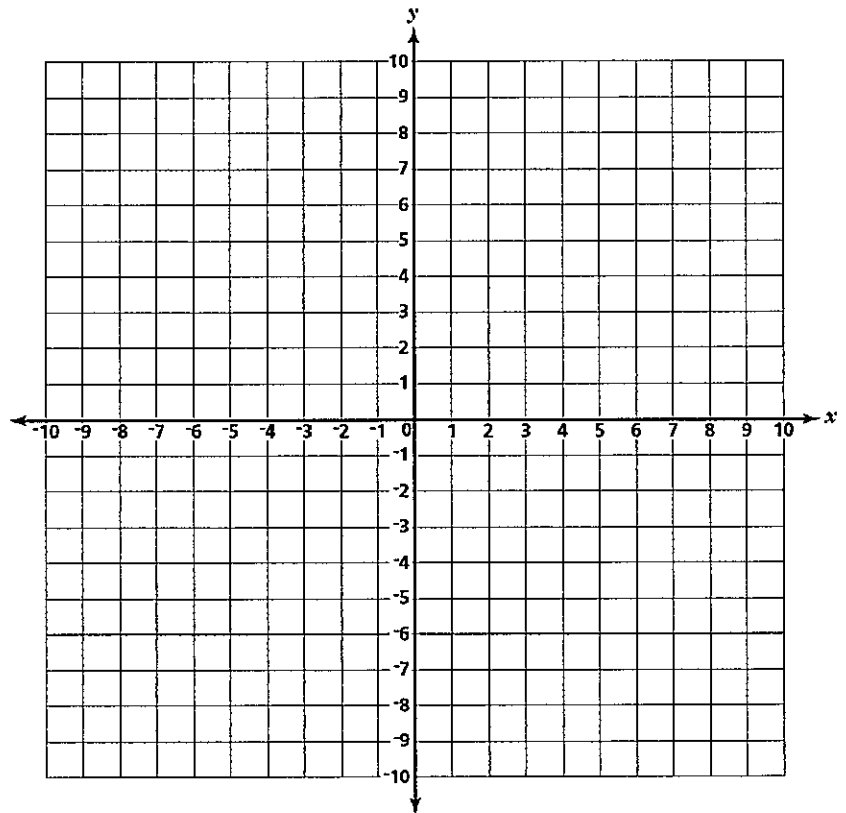


Example 3:

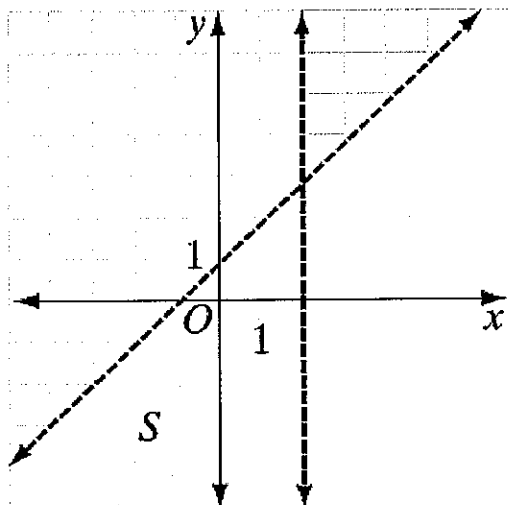
Graph the system of inequalities and name a point in the solution set.

$$2x + y \leq 6$$

$$x + y - 2 > 0$$



4) Write the system of inequalities whose solution set is labeled S



5) In Ms. Dwyer's class, the number of boys is more than twice the number of girls. There are at least 2 girls. There are no more than 10 boys.

(a) Write the three sentences given above as three inequalities, letting x equal the number of girls and y equal the number of boys.

(b) On a set of axes, graph the three inequalities written in part (a)

(c) Label the solution set of the system of inequalities S.

(d) Do the coordinates of every point in the region represent the possible number of girls and number of boys in Ms. Dwyer's class? Explain your answer.

(e) Write an ordered pair that could represent the number of girls and boys in Ms. Dwyer's class.

