

Study Guide

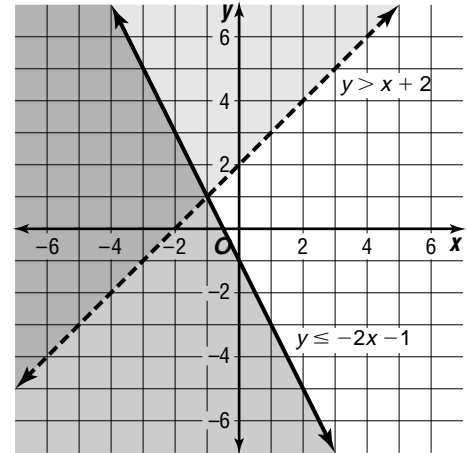
Student Edition
Pages 482–486

Graphing Systems of Inequalities

The solution of a system of inequalities is the set of all ordered pairs that satisfy both inequalities. To find the solution of the system

$$\begin{aligned} y &> x + 2 \\ y &\leq -2x - 1, \end{aligned}$$

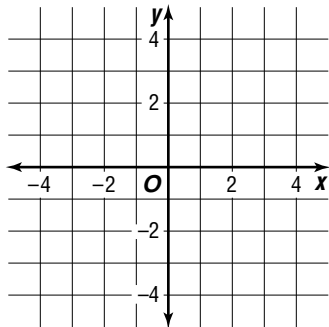
graph each inequality. The graph of each inequality is called a **half-plane**. The intersection of the half-planes represents the solution of the system. The graphs of $y = x + 2$ and $y = -2x - 1$ are the boundaries of the region.



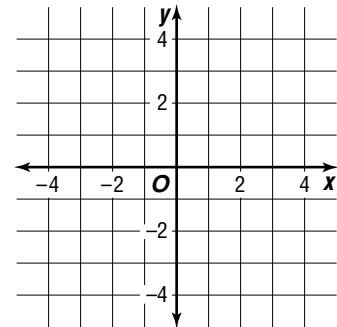
An inequality containing an absolute value expression can be graphed by graphing an equivalent system of two inequalities.

Solve each system of inequalities by graphing.

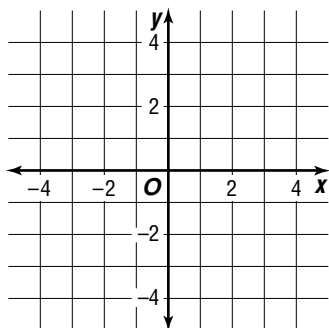
1. $y \geq 2x$
 $y \geq -1$



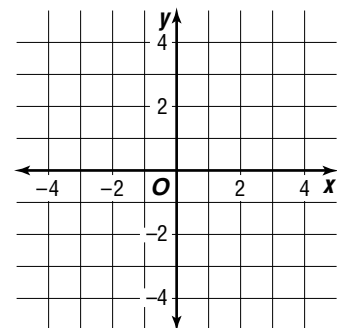
2. $5x - 2y < 6$
 $y > -x + 1$



3. $|y| > x$



4. $-x + y \leq 6$
 $x + y \leq 2$



5. Write a system of inequalities for the graph at the right.

