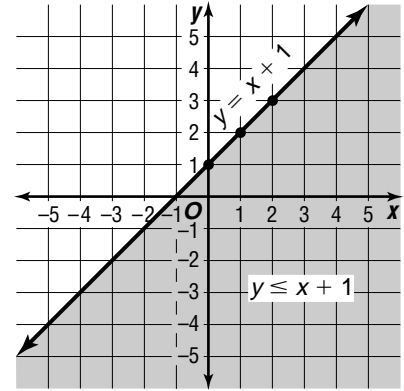
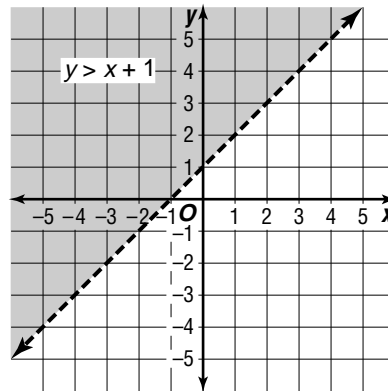
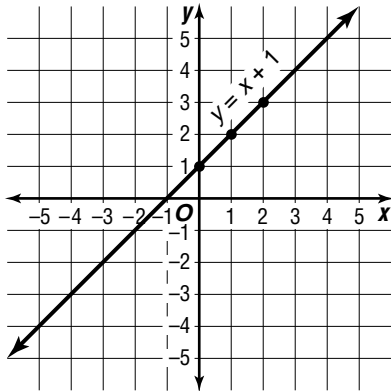


## Study Guide

## Graphing Inequalities in Two Variables



The graph of the equation  $y = x + 1$  is a line that separates the coordinate plane into two regions. Each region is called a **half-plane**. The line for  $y = x + 1$  is called the **boundary** for each half-plane.

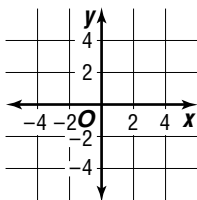
The boundary line in both regions is the line for  $y = x + 1$ .

In  $y > x + 1$ , the boundary is *not* part of the graph. The boundary is shown as a dashed line. All points above the line are part of the graph. This graph is called an **open half-plane**.

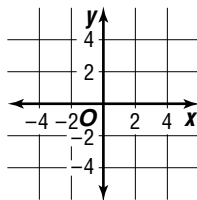
In  $y \leq x + 1$ , the boundary *is* part of the graph and is shown as a solid line. The graph also contains all points below the line. This graph is called a **closed half-plane**.

**Graph each inequality.**

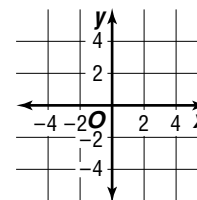
1.  $y < 4$



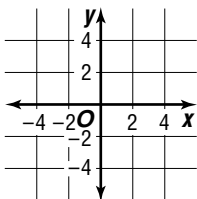
2.  $3x < y$



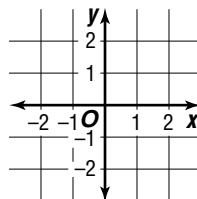
3.  $2x - 3y \leq 6$



4.  $-5x + 2 \geq y$



5.  $x - y \geq 1$



6.  $-x > y$

