

9.1 Linear Inequalities in Two Variables

A linear inequality in two variables may be in one of the following four forms:

$$Ax + By < C$$

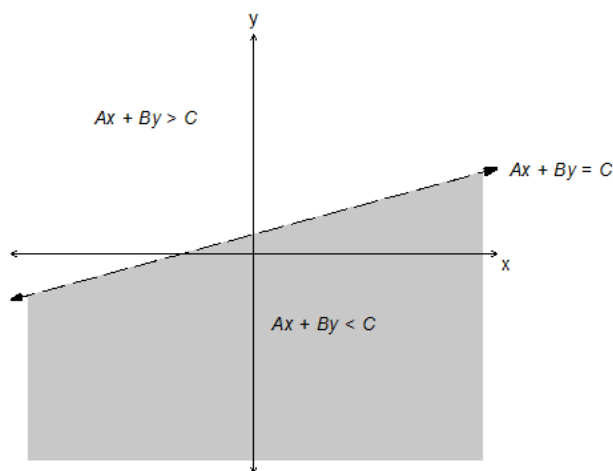
$$Ax + By \leq C$$

$$Ax + By > C$$

$$Ax + By \geq C$$

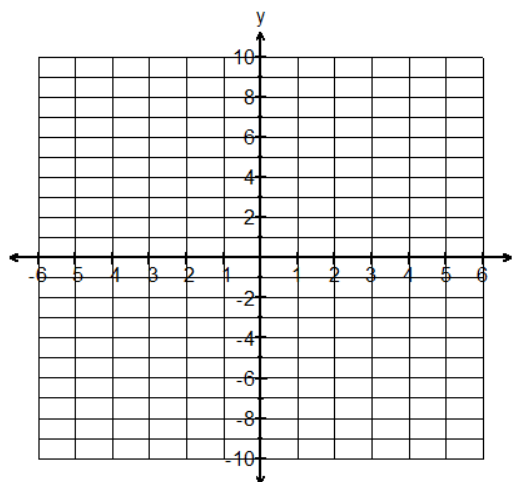
where A , B , and C , are real numbers

An inequality in two variables describes a region in the Cartesian plane. The set of points that satisfy a linear inequality can be called the **solution set** or **solution region**. The line related to the linear inequality is called the **boundary**, and may or may not be part of the solution region.

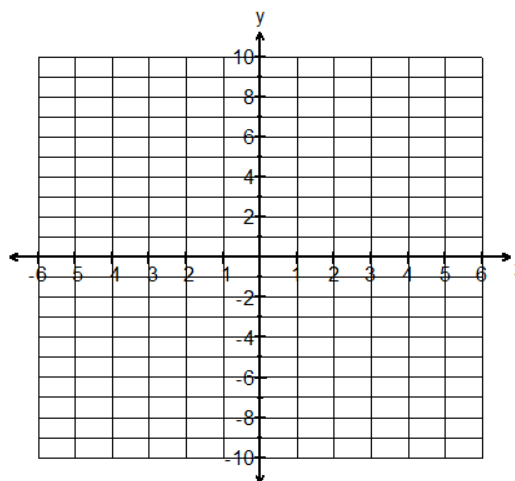


A **dashed** line is used to indicate that the boundary is not part of the solution region. A **solid** line is used to indicate that the boundary is part of the solution region.

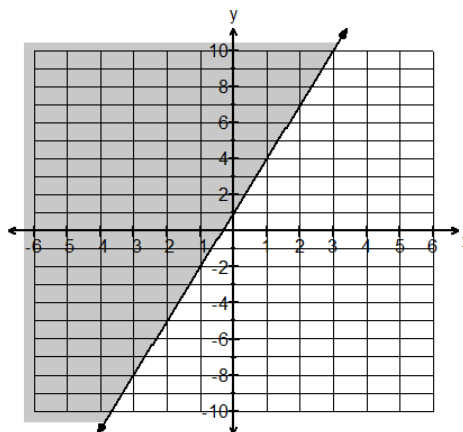
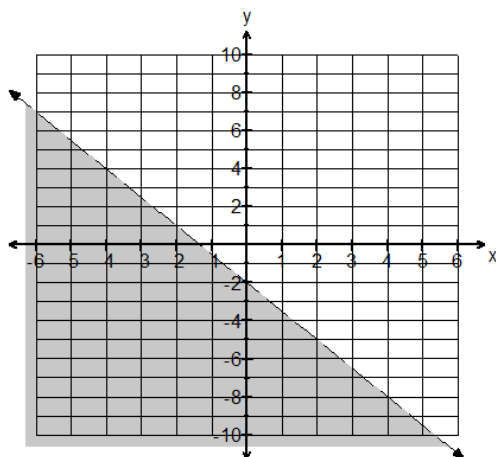
Ex.1 Graph $2x + 3y \leq 6$



Ex. 2 Graph $10x - 5y > 0$



Ex. 3 Write an inequality to represent each graph.



Ex. 4 Suppose that you are constructing a tabletop using aluminum and glass. The most you can spend on materials is \$50. Laminated safety glass is \$60/m², and aluminum costs \$1.75/ft. You can choose the dimensions of the table and the amount of each material used. Find all the possible combinations of materials sufficient to make the tabletop.

Key Ideas: pg. 471

Assign: pg 472-475 1(a), 3(abc), 4(bce), 9, 10,