


Chapter 5 Review

Important Terms, Symbols, Concepts



■ 5.1. Inequalities in Two Variables

- A line divides the plane into two regions called **half planes**.
 - A vertical line divides the plane into **left** and **right half planes**
 - A nonvertical line divides it into **upper** and **lower half planes**.
 - In either case, the dividing line is called the **boundary line** of each half-plane.

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- 5.1. Inequalities in Two Variables (continued)
 - The **graph of a linear inequality** is the half plane obtained by following the procedure in this section.
 - The variables in an applied problem are often required to be **nonnegative**.

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■ 5.2. Systems of Linear Inequalities in Two Variables

- The **solution region** (also called the **feasible region**) of a system of linear inequalities is the graph of all ordered pairs that simultaneously satisfy all the inequalities in the system.
- A **corner point** of a solution region is a point in the region that is the intersection of two boundary lines.
- A solution region is **bounded** if it can be enclosed in a circle and **unbounded** if it can not.

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- 5.3. Linear Programming in Two Dimensions: Geometric Approach
 - The problem of finding the optimal (maximum or minimum) value of a linear objective function on a feasible region is called a **linear programming problem**.
 - The optimal value (if it exists) of the objective function in a linear programming problem must occur at one (or more) of the corner points of the feasible region. Existence criteria are described and a solution procedure is listed in this section.