

# Systems of Linear Equations and Inequalities

In this chapter, you will:

- Solve systems of linear equations by graphing, substitution, and elimination.
- Solve systems of linear inequalities by graphing.

## Key Concepts

### Systems of Equations (Lessons 6-1 through 6-5)

- A system with a graph of two intersecting lines has one solution and is *consistent and independent*.
- Graphing a system of equations can only provide approximate solutions. For exact solutions, you must use algebraic methods.
- In the substitution method, one equation is solved for a variable and the expression substituted into the second equation to find the value of another variable.
- In the elimination method, one variable is eliminated by adding or subtracting the equations.
- Sometimes multiplying one or both equations by a constant makes it easier to use the elimination method.
- The best method for solving a system of equations depends on the coefficients of the variables.

### Systems of Inequalities (Lesson 6-6)

- A system of inequalities is a set of two or more inequalities with the same variables.
- The solution of a system of inequalities is the intersection of the graphs.

## Key Vocabulary



<b>augmented matrix</b> (p. 370)	<b>inconsistent</b> (p. 335)
<b>consistent</b> (p. 335)	<b>independent</b> (p. 335)
<b>dependent</b> (p. 335)	<b>matrix</b> (p. 370)
<b>dimension</b> (p. 370)	<b>substitution</b> (p. 344)
<b>element</b> (p. 370)	<b>system of equations</b> (p. 335)
<b>elimination</b> (p. 350)	<b>system of inequalities</b> (p. 372)