

## Section 2.2 Solving Equations Graphically

**Objective:** In this lesson you learned how to find intercepts, zeros, and solutions of equations graphically.

Course Number

Instructor

Date

### Important Vocabulary

Define each term or concept.

**$x$ -intercept**

**$y$ -intercept**

**Zero**

**Point of intersection**

### I. Intercepts, Zeros, and Solutions (Pages 169–171)

To find the  $x$ -intercepts of the graph of an equation, . . .

To find the  $y$ -intercepts of the graph of an equation, . . .

**Example 1:** For the equation  $3x - 4y = 12$ , find:

(a) the  $x$ -intercept(s), and (b) the  $y$ -intercept(s).

To find the zeros of a function, . . .

For a function  $y = f(x)$  where  $f(a) = 0$ , describe the close connection among  $x$ -intercepts, zeros, and solutions.

**Example 2:** Explain how to verify that 2 and 5 are zeros of the function  $f(x) = x^2 - 7x + 10$ .

### *What you should learn*

How to find  $x$ - and  $y$ -intercepts of graphs of equations

**II. Finding Solutions Graphically** (Pages 171–172)

To use a graphing utility to graphically approximate the solutions of an equation, . . .

***What you should learn***  
How to find solutions of equations graphically

**Example 3:** Use a graphing utility to approximate the solutions of  $3x^2 - 14x = -8$ .

**III. Points of Intersection of Two Graphs** (Pages 173–175)

To find the points of intersection of the graphs of two equations algebraically, . . .

***What you should learn***  
How to find the points of intersection of two graphs

To find the points of intersection of the graphs of two equations with a graphing utility, . . .

**Example 4:** Use (a) an algebraic approach and (b) a graphical approach to finding the points of intersection of the graphs of  $y = 2x^2 - 5x + 6$  and  $x - y = -6$ .

**Homework Assignment**

Page(s)

Exercises