

# Study Guide

PREVIEW

## What's the chapter about?

Chapter 11 is about **rational expressions**. In Chapter 11 you'll learn

- how to solve rational equations.
- how to add, subtract, multiply, and divide rational expressions.
- how to graph rational functions, including inverse variation functions.

### KEY VOCABULARY

#### ► Review

- equivalent equations, p. 132
- transformations, p. 132
- direct variation, p. 234
- polynomial, p. 576
- zero-product property, p. 597

#### ► New

- proportion, p. 643
- extraneous solution, p. 644
- inverse variation, p. 656
- rational number, p. 664
- rational expression, p. 664

- geometric probability, p. 666
- rational equation, p. 690
- rational function, p. 692
- hyperbola, p. 692

PREPARE

## Are you ready for the chapter?

**SKILL REVIEW** These exercises will help you review skills that you'll apply in this chapter. See the given **reference page** if there is something you don't understand.

**Find the value of the expression. Write the answer as a fraction or mixed number in lowest terms. (Skills Review, p. 781–783)**

1.  $\frac{11}{14} - \frac{4}{14}$

2.  $\frac{9}{15} + \frac{7}{10}$

3.  $\frac{6}{11} - \frac{3}{5}$

4.  $\frac{8}{12} + \frac{11}{18}$

**Simplify the expression. (Review Examples 1 and 2, pp. 108–109)**

5.  $\frac{36x}{15} \div \frac{9}{5}$

6.  $49x^2 \div \frac{-7x}{3}$

7.  $\frac{15x + 25}{5}$

8.  $\frac{16 - 4x}{8}$

**Solve the equation by finding square roots or by factoring. (Review pp. 505 and 613)**

9.  $3x^2 - 65 = 178$

10.  $4x^2 - 10x + 6 = 0$

11.  $10x^2 - 30x - 40 = 0$

STUDENT HELP

► Study Tip

"Student Help" boxes throughout the chapter give you study tips and tell you where to look for extra help in this book and on the Internet.

STUDY STRATEGY

## Here's a study strategy!

### Previewing and Reviewing

Preview the chapter. Write down what you already know about each topic. After studying the chapter, go back to each topic and write down what you then know about it. Compare the two sets of notes. See what you have learned.