NAME _____ DATE _____

Parent Guide for Student Success

For use with Chapter 11

Chapter Overview One way that you can help your student succeed in Chapter 11 is by discussing the lesson goals in the chart below. When a lesson is completed, ask your student to interpret the lesson goals for you and to explain how the mathematics of the lesson relates to one of the key applications listed in the chart.

Lesson Title	*Lesson Goals*	*Key Applications*
11.1: Ratio and Proportion	Solve proportions and use proportions to solve real-life problems.	• Archaeology • Murals and Models • What Students Buy
11.2: Percents	Use equations to solve percent problems. Use percents in real-life problems.	• Classifying Insects • Choosing a College • Ozone Layer Survey
11.3: Direct and Inverse Variation	Use direct and inverse variation to model real-life situations.	• Bicycle Banking • Snowshoes • Ocean Temperatures
11.4: Simplifying Rational Expressions	Simplify a rational expression. Use rational expressions to find geometric probability.	• Carnival Games • Meteor Strikes
11.5: Multiplying and Dividing Rational Expressions	Multiply and divide rational expressions. Use rational expressions as real-life models.	• Car Sales • Railroad Travel • Service Industry
11.6: Adding and Subtracting Rational Expressions	Add and subtract rational expressions with and without like denominators.	• Planning a Trip • Travel by Boat • Mowing Lawns
11.7: Dividing Polynomials	Divide a polynomial by a monomial or by a binomial factor. Use polynomial long division.	• Exercise Equipment • Age Relationships
11.8: Rational Equations and Functions	Solve rational equations. Graph rational functions.	• Batting Average • Fundraising • Origami Cranes

Study Strategy

Previewing and Reviewing is the study strategy featured in Chapter 11 (see page 642). Encourage your student to write down what he or she knows about each topic before beginning the chapter and then again after studying the chapter. Looking at these notes together will help you and your student see what he or she has learned.

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Key Ideas **Your student can demonstrate understanding of key concepts by working through the following exercises with you.**

Lesson	*Exercise*
11.1	Solve the proportion. Check for extraneous solutions. $\frac{x^2 - 16}{x + 4} = \frac{x - 4}{3}$
11.2	If 160 out of 210 people surveyed chose Brand X, what percent chose Brand X?
11.3	Time to reach a destination varies inversely as the speed traveled. If it takes 6 hours at an average speed of 55 miles per hour to get to your vacation resort, how long would it take at 60 miles per hour?
11.4	Simplify the expression if possible. Indicate for what values of x it is undefined. $\frac{x^2 - 3x}{x^2 - 9}$
11.5	Simplify the expression. $\frac{x^2 - x - 30}{9x} \cdot \frac{3x^2 - 18x}{x + 5}$
11.6	Joe Spiegel has 30 hr he can work. He spends 3 hr making a craft that sells for \$10 and 2 hr making a craft that sells for \$5. The total value of the crafts he can make is modeled by $V = \frac{10x}{3} + \frac{5(30 - x)}{2}$, where x is the time spent making \$10 crafts. Simplify the model and find the value of Joe's crafts if he spends 12 hr making \$10 crafts.
11.7	Divide $x^2 + 4x - 45$ by $x - 5$.
11.8	How much time on each type of craft must Joe Spiegel from Exercise 11.6 spend so the value of his crafts is \$90?

Home Involvement Activity

Directions: Find how much your family spent on groceries the last 3 weeks. Round each week to the nearest \$10. Estimate if necessary. Find the average amount spent per week. Suppose you want to decrease your average by \$10 by limiting your spending per week to the minimum week. How many weeks would it take? (*Hint:* Write and solve an equation in this form:

$$\frac{[\text{sum} + \text{minimum} \cdot x]}{[3 + x]} = (\text{average} - 10)$$

Answers

11.1: 4 **11.2:** about 76% **11.3:** 5.5 hr **11.4:** $\frac{x}{x+3}$; $x = 3$, $x = -3$ **11.5:** $\frac{(x-6)^2}{3}$

11.6: $V = \frac{5x + 450}{6}$, \$85 **11.7:** $x + 9$ **11.8** 18 hr on \$10 crafts and 12 hr on \$5 crafts

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