Name _____ Date _____

CHAPTER 8

Parents as Partners

For use with Chapter 8

Chapter Overview **One way you can help your student succeed in Chapter 8 is by discussing the lesson goals in the chart below. When a lesson is completed, ask your student the following questions. "What were the goals of the lesson? What new words and formulas did you learn? How can you apply the ideas of the lesson to your life?"**

Lesson Title	Lesson Goals	Key Applications
8.1: Model Inverse and Joint Variation	Use inverse variation and joint variation models.	• MP3 Players • Computer Chips • Digital Cameras
8.2: Graph Simple Rational Functions	Graph rational functions.	• 3-D Modeling • Internet Service • Rock Climbing Gym
8.3: Graph General Rational Functions	Graph rational functions with higher-degree polynomials.	• Manufacturing • Agriculture • Aquarium Design
8.4: Multiply and Divide Rational Expressions	Multiply and divide rational expressions.	• Packaging • Geometry • Entertainment
8.5: Add and Subtract Rational Expressions	Add and subtract rational expressions.	• Physics • Jet Stream • Electronics
8.6: Solve Rational Equations	Solve rational equations.	• Alloys • Video Game Sales • Volleyball

Big Ideas for Chapter 8

In Chapter 8, you will apply the big ideas listed in the Chapter Opener (see page 549) and reviewed in the Chapter Summary (see page 602).

1. Graphing rational functions
2. Performing operations with rational expressions
3. Solving rational equations

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Name _____ Date _____

CHAPTER SUPPORT

CHAPTER 8

Parents as Partners *continued*

For use with Chapter 8

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

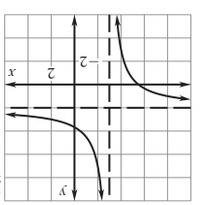
Lesson	Exercise
8.1	The variables x and y vary inversely. Use the given values to write an equation relating x and y. Then find y when $x = 4$. (a) $x = 8, y = 2$ (b) $x = -3, y = 10$
8.2	Graph $y = \frac{5}{x + 3} + 2$. State the domain and range.
8.3	Graph $y = \frac{8}{x^2 + 4}$. State the domain and range.
8.4	Perform the indicated operation and simplify. (a) $\frac{x^2 + 9x + 8}{21x^2} \cdot \frac{7x^3 - 14x^2}{x^2 + 6x - 16}$ (b) $\frac{y^2 + 8y + 15}{y - 2} \div \frac{y^2 + 6y + 9}{3y^2 - 6y}$
8.5	Perform the indicated operation and simplify. (a) $\frac{x + 3}{5x + 10} + \frac{2x}{x^2 - 2x - 8}$ (b) $\frac{x + 4}{x^2 - 9} - \frac{x - 2}{3x - 9}$
8.6	A hockey team has won 14 out of 18 games played. Solve the equation $\frac{80}{100} = \frac{14 + x}{18 + x}$ to find the number of consecutive games the team needs to win to raise its percentage to 80%.

Home Involvement Activity

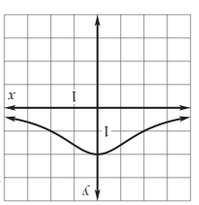
Directions Choose three different size and shape food containers that have similar volumes. Find the ratio of surface area to volume for each container. Then tell which container is more efficient.

Answers

8.1: (a) $y = \frac{16}{x}$, 4 (b) $y = -\frac{30}{x}$, -7.5

8.2: 

; domain: all real numbers except -3, range: all real numbers except 2

8.3: 

; domain all real numbers, range: $0 < y \leq 2$

8.4: (a) $\frac{x + 1}{3}$ (b) $\frac{3y(y + 5)}{y + 3}$ **8.5:** (a) $\frac{x^2 + 9x - 12}{5(x + 2)(x - 4)}$ (b) $\frac{-x^2 + 2x + 18}{3(x - 3)(x + 3)}$ **8.6:** 2 games

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