NAME _____ DATE _____

Parent Guide for Student Success

For use with Chapter 10

Chapter Overview **One way that you can help your student succeed in Chapter 10 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*
10.1: Adding and Subtracting Polynomials	Add and subtract polynomials. Use polynomials to model real-life situations.	• Mounting a Photo • Building a House • Energy Use
10.2: Multiplying Polynomials	Multiply two polynomials. Use polynomial multiplication in real-life situations.	• Carpentry • Football Field • Videocassette Sales
10.3: Special Products of Polynomials	Use special product patterns for the product of a sum and a difference and for the square of a binomial. Use special products as real-life models.	• Punnett Squares • Genetics • Investment Value
10.4: Solving Polynomial Equations in Factored Form	Solve a polynomial equation in factored form. Relate factors and x-intercepts.	• Arecibo Observatory • Gateway Arch • Barringer Meteor Crater
10.5: Factoring $x^2 + bx + c$	Factor a quadratic expression of the form $x^2 + bx + c$. Solve quadratic equations by factoring.	• Landscape Design • Making a Sign • The Taj Mahal
10.6: Factoring $ax^2 + bx + c$	Factor a quadratic expression of the form $ax^2 + bx + c$. Solve quadratic equations by factoring.	• Cliff Diving • Gymnastics • Warp and Weft
10.7: Factoring Special Products	Use special product patterns to factor quadratic polynomials. Solve quadratic equations by factoring.	• Block and Tackle • Safe Working Load • Pole Vaulting
10.8: Factoring Using the Distributive Property	Use the distributive property to factor a polynomial. Solve polynomial equations by factoring.	• Vertical Motion and Gravity • Packaging

Test-Taking Strategy

Read test questions carefully to be sure that you **answer the right question.** Watch out for questions that involve more than one step. Ask your student to find an example of a problem in the chapter that involves two or more steps. Have your student give the answer to a preliminary step and then give the correct final answer.

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

Lesson	*Exercise*
10.1	Find the sum and the difference of $(4x^3 - 2x + 7)$ and $(2x^3 + 5x - 9)$.
10.2	The number of calendars a class can sell is given by $50 + 4x$. Each calendar is sold for $0.15x + 3$ dollars. Find a model for the class's total revenue from selling calendars as a quadratic trinomial.
10.3	Show how to use mental math and the Sum and Difference Pattern to find $38 \cdot 42$.
10.4	A highway arch can be modeled in feet by $y = -0.125(x - 12)(x + 12)$. How wide is the arch at the base? How high is the arch?
10.5	Solve $x^2 - x - 42 = 0$.
10.6	A competitive diver jumps from a 10-foot high platform with an initial velocity of 6 feet per second. The diver's height h, t seconds after she jumps, can be modeled by $h = -16t^2 + 6t + 10$. How long does it take the diver to hit the water?
10.7	The area of a square garden is modeled by $A = x^2 - 24x + 144$ square feet. Use the variable x to express the dimensions of the garden.
10.8	Factor the expression completely. $4x^2y - 44xy + 72y$

Home Involvement Activity

You will need: A tape measure, a rectangular room

Directions: Measure the length and width of a rectangular room in your home, to the nearest foot. Suppose you want to buy an oriental carpet to fit in the room with a space x feet wide on all four sides. Find a model for the area of the rug. Write it as a quadratic trinomial. Use the model to find the cost of the carpet if $x = 3$ and carpet costs \$7.50 a square foot.

Answers

10.1: $6x^3 + 3x - 2$; $2x^3 - 7x + 16$ **10.2:** $R = 0.6x^2 + 19.5x + 150$
10.3: $38 \cdot 42 = (40 - 2)(40 + 2) = 1600 - 4 = 1596$ **10.4:** 24 ft; 18 ft **10.5:** 7, −6 **10.6:** 1 sec
10.7: $(x - 12)$ft by $(x - 12)$ft **10.8** $4y(x - 9)(x - 2)$

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