NAME _____ DATE _____

Parent Guide for Student Success

For use with Chapter 5

Chapter Overview **One way that you can help your student succeed in Chapter 5 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*
5.1: Writing Linear Equations in Slope-Intercept Form	Use the slope-intercept form to write the equation of a line. Model a real-life situation with a linear function.	• Population Change • Renting a Moving Van • Fundraising
5.2: Writing Linear Equations Given the Slope and a Point	Use the slope and any point on a line to write an equation of the line. Use a linear model to make predictions about a real-life situation.	• Vacation Trips • Cellular Rates • Taxi Ride
5.3: Writing Linear Equations Given Two Points	Write an equation of a line given two points on the line. Use a linear equation to model a real-life problem.	• Archaeology • Chunnel • Echoes
5.4: Fitting a Line to Data	Find a linear equation that approximates a set of data points. Determine the type of correlation in a set of real-life data.	• Biology • Discus Throws • Football Salaries
5.5: Point-Slope Form of a Linear Equation	Use the point-slope form to write an equation of a line and to model a real-life situation.	• Marathon • Field Trip • Mountain Climbing
5.6: The Standard Form of a Linear Equation	Write a linear equation in standard form and use the standard form to model real-life situations.	• Barbecue • Bird Seed Mixture • Color Printing
5.7: Predicting with Linear Models	Determine whether a linear model is appropriate. Use a linear model to make a real-life prediction.	• Advertising • Movie Theaters • College Tuition

Study Strategy

Writing and Taking a Practice Test is the study strategy featured in Chapter 5 (see page 272). Encourage your student to create a test, exchange tests with a classmate, score each other's tests, and plan further study. You may wish to discuss with your student the kinds of test questions the teacher is likely to ask and to help your student in developing a study plan.

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

Lesson	*Exercise*
5.1	A cellular phone costs \$15 a month plus \$0.18 per minute of use. Write a linear equation to model the cost of cellular phone use and find the monthly bill for 20 minutes of use.
5.2	Write an equation of the line that is parallel to $y = \frac{1}{2}x - 9$ and passes through the point $(-4, 7)$.
5.3	Write an equation in slope-intercept form of the line that passes through the points $(-2, 9)$ and $(6, -7)$.
5.4	Would you expect a *positive correlation*, a *negative correlation*, or *relatively no correlation* between the value of a dollar and the years since 1900? Explain.
5.5	Write an equation in point-slope form of the line that passes through the points $(-5, -4)$ and $(-2, 8)$.
5.6	You have \$60 to spend at a sale where sweatshirts are \$10 each and blue jeans are \$15 each. Your parents agree to pay the tax. Write an equation that models the different number of sweatshirts and blue jeans you can buy. Find at least three combinations that allow you to spend the whole \$60.
5.7	In 1970, the leading jockey won about \$2.63 million. In 1980, the leader won about \$7.66 million, and in 1990, the leader won about \$13.88 million. Write a linear model for the amount earned y by the leading jockey t years after 1970. Use it to predict the amount earned in the year 2000.

Home Involvement Activity

You will need: A calculator

Directions: Find the amount your family spent on utilities (or one specific utility) last year and at least 3 years ago. Use the data to find a linear model for the amount y spent t years after 1990. Use the model to estimate how much you can expect to spend on utilities next year.

Answers

5.1: $y = 0.18t + 15$; \$18.60 **5.2:** $y = \frac{1}{2}x + 9$ **5.3:** $y = -2x + 5$ **5.4:** negative correlation; the value of a dollar has been decreasing as the years since 1900 have increased. **5.5:** $y + 4 = 4(x + 5)$ or $y - 8 = 4(x + 2)$ **5.6:** $10x + 15y = 60$; 6 sweatshirts and no jeans, no sweatshirts and 4 jeans, 3 sweatshirts and 2 jeans **5.7:** *Sample answer:* $y = 0.563x + 2.43$; about \$19.3 million

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