Name _____ Date _____

LESSON 5.1

Challenge Practice

For use with pages 282–291

In Exercises 1–4, use the following information.

The number of households in the U.S. having at least one dog was 40 million in the year 2000 and 27 million in the year 1950.

1. Using the year as the horizontal axis scale and number of households as the vertical axis scale, find the slope of the line through the two points defined by the household data. Interpret this slope.
2. Write a linear equation to model the number of households (in millions) in the U.S. that have at least one dog t years after 1950.
3. Use the equation from Exercise 2 to estimate the number of households in the U.S. that had at least one dog in the year 1964.
4. Use the equation from Exercise 2 to estimate the number of households in the U.S. that will have at least one dog in the year 2015.

In Exercises 5–7, use the following information.

An automobile is expected to lose 10% of its initial value every year. The average automobile purchased in 2005 had an initial value of $20,000.

5. Write a linear equation to model the value of the average automobile purchased in 2005 t years after 2005.
6. Use the equation from Exercise 5 to estimate the value of the average automobile purchased in 2005 in the year 2010.
7. Use the equation from Exercise 5 to estimate the year in which the average automobile purchased in 2005 reaches a value of $0.

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