

NAME \_\_\_\_\_

Module 7    Ratio, Proportion, and Percent  
Lesson 7    Problem Solving with Percents

# Challenge Problems

## 7.7

### Set 1

- 1 Explain when a percent of increase will be greater than 100%. Give an example.
  
- 2 Sandy saved \$200 at 5% simple interest. How many years did she save if she earned \$30 in interest?
  
- 3 Jermaine saved \$500 for six years and earned \$90 in simple interest. What was the interest rate?

## Possible Answers

### Set 1

1. A percent of increase is the ratio of the amount of increase divided by the original amount. When the numerator is greater than the denominator, the fraction will be greater than one, or greater than 100%. An increase from 200 to 500 is an example because the amount of increase is 300, which is greater than the original amount of 200.
2. Write the formula for simple interest, substituting 30 for  $I$ , 200 for  $P$ , and 0.05 for  $r$ .

$$\begin{aligned}I &= Prt \\30 &= 200(0.05)t \\30 &= 10t \\3 &= t\end{aligned}$$

Sandy saved for three years.

3. In the formula for simple interest, substitute 90 for  $I$ , 500 for  $P$ , and six for  $t$ .

$$\begin{aligned}I &= Prt \\90 &= 500r(6) \\90 &= 3,000r \\90 \div 3,000 &= 3,000r \div 3,000 \\0.03 &= r\end{aligned}$$

The interest rate was 3%.