

## Chapter 5 Section 3

### Percent Equations: Part II

◆ To find the percent when the base and amount are given

**Example 1:**

A recent promotional game at a grocery store listed the probability of winning a prize as “**1 chance in 2**”. A percent can be used to describe the chance of winning. This requires answering the question “**What percent of 2 is 1?**”

⇒ The chance of winning can be found by **solving the basic percent equation for percent.**

|  |          |   |   |
|--|----------|---|---|
| What percent of  | <b>2</b> | is  | <b>1</b>  |
| <span style="border: 1px solid black; padding: 2px;"><b>Percent</b></span> | ×        | <span style="border: 1px solid black; padding: 2px;"><b>base</b></span> | =   |
| <b>n</b>   |          | <b>2</b>  | <span style="border: 1px solid black; padding: 2px;"><b>amount</b></span> |
|  |          |   | <b>1</b>  |
| n  | ×        | 2   | =   |
|  |          | 2n  | =   |
|  |          | $\frac{2n}{2}$  | =   |
|  |          | n   | =   |
|  |          | <span style="border: 1px solid black; padding: 2px;"><b>n</b></span>    | =   |
|  |          |   | <span style="border: 1px solid black; padding: 2px;"><b>50%</b></span>    |

**There is a 50% chance of winning the prize.**

**Example 2:**      What percent of 12 is 27?

**Solution**       $n \times 12 = 27$

$$\frac{12n}{12} = \frac{27}{12}$$

$$n = 2.25$$

$$\boxed{n = 225\%}$$

**Example 3:** 25 is what percent of 75?

**Solution**  $25 = n \times 75$

$$\frac{25}{75} = \frac{75n}{75}$$

$$\frac{1}{3} = n$$

$$33\frac{1}{3}\% = n$$

◆ **To solve application problems**

**Example:**

The monthly house payment for the Kaminski family is **\$787.50**. What percent of the Kaminskis' monthly income of **\$3750** is the house payment?

⇒ **Strategy**

To find what percent of the income the house payment is, write and solve the **basic percent equation**, using **n** to represent the **percent**. The **base** is **\$3750** and the amount is **\$787.50**.

⇒ **Solution**

$$n \times \$3750 = \$787.50$$

$$\frac{n \times \$3750}{\$3750} = \frac{\$787.50}{\$3750.00}$$

$$\boxed{n = 0.21 = 21\%}$$

**The house payment is 21% of the monthly income.**