7.6 Markup and Discount

California Standards

In this lesson you'll:

- Solve problems that involve markups and discounts. (NS 1.7)

Goal 1 Finding a Markup

A retail store buys items at *wholesale prices*. To cover expenses and make a profit, the store sells the items at higher *retail prices*. The difference between the retail and wholesale prices is called the **markup**.

$$\text{Markup} = \text{Retail price} - \text{Wholesale price}$$

EXAMPLE 1 Finding the Amount of Markup

CLOTHING A store buys a shirt at a wholesale price of \$13.50 and sells the shirt for \$24.95. What is the amount of markup?

Solution

$$\begin{aligned}\text{Markup} &= \text{Retail price} - \text{Wholesale price}\\ &= 24.95 - 13.50\\ &= 11.45\end{aligned}$$

ANSWER ▶ The amount of markup is \$11.45.

To find the *percent of markup*, use the wholesale price as the base and the amount of markup as the part of the base.

EXAMPLE 2 Finding a Percent of Markup

What is the percent of markup for the shirt in Example 1?

Solution

$$\begin{aligned}\text{Percent of markup} &= \frac{\text{Markup}}{\text{Wholesale price}}\\ &= \frac{11.45}{13.50}\\ &\approx 0.85 = 85\%\end{aligned}$$

ANSWER ▶ The percent of markup is about 85%.

Student Help

▶ **MORE EXAMPLES**

More examples are available at www.mcdougallittell.com

Often a store manager determines the retail price of an item by using a fixed percent of markup. In Example 3, you will determine what the retail price for a piece of jewelry should be by finding the amount of markup and adding it to the wholesale price.

Student Help

▶ **STUDY TIP**
You can also find the amount of markup in Example 3 by setting up a proportion:
$\frac{x}{180} = \frac{150}{100}$

EXAMPLE 3 Finding a Retail Price

JEWELRY You are the manager of a jewelry store. You buy a ring at a wholesale price of \$180. Your percent of markup is 150%. Find the retail price.

Solution

First find the amount of markup.

Markup = Percent of markup • Wholesale price
= 150% • 180 Substitute for percent and price.
= 1.5 • 180 Write percent in decimal form.
= 270 Multiply.

Then find the sum of the amount of markup and the wholesale price.

Retail price = Wholesale price + Markup
= 180 + 270 = 450

ANSWER ▶ The retail price is \$450.

Goal 2 FINDING A DISCOUNT

When an item is on sale, the difference between the regular price and the sale price is called the **discount**.

Discount = Regular price − Sale price

To find the *percent of discount*, use the regular price as the base and the amount of discount as part of the base.

EXAMPLE 4 Finding a Percent of Discount

BOOKS A \$36 book is on sale for \$27.

a. Find the amount of discount. **b.** Find the percent of discount.

Solution

a. Discount = Regular price − Sale price
= 36 − 27 = 9

ANSWER ▶ The discount is \$9.

b. To find the percent of discount, use \$36 as the base.

$$\text{Percent of discount} = \frac{\text{Discount}}{\text{Regular price}} = \frac{9}{36}$$
$$= 0.25 = 25\%$$

ANSWER ▶ The percent of discount is 25%.

EXAMPLE 5 Finding a Percent of Discount

SWEATSHIRT Last week you bought a sweatshirt on sale for \$16.80. This week you find the sweatshirt is back at the regular price of \$22.68. A friend tells you that you received a 35% discount because $22.68 - 16.80 = 5.88$ and \$5.88 is 35% of \$16.80.

a. Is your friend correct?

b. If not, what is the percent of discount?

Solution

a. Your friend is using the sale price as the base.

$$\frac{5.88}{16.80} = 0.35 = 35\%$$

ANSWER ▶ This is not correct. The regular price should be the base.

b. To find the percent of discount, use the regular price as the base.

$$\frac{5.88}{22.68} \approx 0.259$$ Divide discount by regular price.

$$= 25.9\%$$ Write percent.

ANSWER ▶ The percent of discount is about 25.9%.

7.6 Exercises

Guided Practice

In Exercises 1–4, find the percent of markup or the percent of discount.

1. Regular price: \$35
   Sale price: \$30

2. Wholesale price: \$44
   Retail price: \$59

3. Regular price: \$24
   Sale price: \$20

4. Wholesale price: \$180
   Retail price: \$224

5. **DISCOUNT** You are in a shoe store and see the sign at the right. Explain how you can find the original price of sneakers. Then find the original price.

MARKUP **In Exercises 6 and 7, use the following information.** The wholesale price of a sweater is \$30. The clothing store sells the sweater for \$78.

6. What is the amount of markup?

7. What is the percent of markup?