

Percent of Change (Pages 212–217)

When an increase or decrease is expressed as a percent, the percent is called the **percent of increase** or the **percent of decrease**. **Sales tax**, a tax added to the cost of an item, is an example of a percent of increase.

Discount, the amount by which the regular price of an item is reduced, is an example of a percent of decrease.

EXAMPLES

- A** Find the percent of decrease. Round to the nearest percent.

original: 56

new: 32

Find the amount of decrease.

$$56 - 32 = 24$$

$$\frac{P}{B} = \frac{r}{100} \quad \text{Use the percent proportion.}$$

$$\frac{24}{56} = \frac{r}{100}$$

$$24(100) = 56r \quad \text{Cross products}$$

$$2400 = 56r$$

$$43 \approx r \quad \text{Divide each side by 56.}$$

The percent of decrease is about 43%.

- B** A book costs \$15. If a sales tax of 6% is added to the price of the book, what is the total price?

A sales tax of 6% means the total price will be 100% + 6% or 106% of \$15. Use the percent equation to find the total price.

$$P = RB$$

$$P = 1.06(15)$$

$$P = 15.90$$

The total price will be \$15.90.

PRACTICE

Find the percent of increase or decrease. Round to the nearest percent.

1. original: 12

new: 30

2. original: 40

new: 70

3. original: 14

new: 8

4. original: 100

new: 120

5. original: 50

new: 69

6. original: 16

new: 20

The cost of an item and a sales tax rate are given. Find the total price of each item to the nearest cent.

7. notebook: \$1.49; 7.5%

8. gum: \$0.45; 8%

9. shirt: \$28.99; 6%

The original cost of an item and a discount rate are given. Find the sale price of each item to the nearest cent.

10. printer: \$101.98; 15%

11. jeans: \$44; 20%

12. stapler: \$4.99; 5%

- 13. Standardized Test Practice** All shirts at a store are reduced by 40%. Find the sale price of a shirt that normally costs \$18.

A \$7.20

B \$10.80

C \$13.50

D \$15.00

Answers: 1. 150% inc 2. 75% inc 3. 43% dec 4. 20% inc 5. 38% inc 6. 25% inc 7. \$1.60 8. \$0.49 9. \$30.73 10. \$86.68 11. \$35.20 12. \$4.74 13. B