

## Lesson 6-8

### Example 1 Find Percent of Change

Find the percent of change from \$32 to \$44.

**Step 1** Subtract to find the amount of change.  
 $44 - 32 = 12$       new amount - original amount

**Step 2** Write a ratio that compares the amount of change to the original amount.  
Express the ratio as a percent.

$$\begin{aligned}\text{percent of change} &= \frac{\text{amount of change}}{\text{original amount}} \\ &= \frac{12}{32} && \text{Substitution} \\ &= 0.375 \text{ or } 37.5\% && \text{Write the decimal as a percent.}\end{aligned}$$

The amount of change from \$32 to \$44 is 37.5%.

### Example 2 Find Percent of Increase

**TEMPERATURE** In Cleveland, Ohio, the high temperature on one day was 43° F and the next day was 71°. Find the percent of change.

**Step 1** Subtract to find the amount of change  
 $71 - 43 = 28$

**Step 2** Write a ratio that compares the amount of change to the original temperature.  
Express the ratio as a percent.

$$\begin{aligned}\text{percent of change} &= \frac{\text{amount of change}}{\text{original temperature}} \\ &= \frac{28}{43} && \text{Substitution} \\ &\approx 0.65 \text{ or } 65\% && \text{Write the decimal as a percent.}\end{aligned}$$

The percent of change is 65%. In this case, the percent of change is a percent of increase.

### Example 3 Multiple-Choice Test Item

Refer to the table shown. Which student had the greatest percent of increase in test score from pretest to posttest?

Student Name	Pretest Score	Posttest Score
Alex	75	83
Emily	84	89
Zachary	63	91
Karli	88	95

- A. Alex                      B. Emily                      C. Zachary                      D. Karli

#### Read the Test Item

Percent of increase in test score tells how much the test score has increased in relation to the pre-test score.

#### Solve the Test Item

Use a ratio to find each percent of increase. Then compare the percents.

• **Alex**

$$\frac{83 - 75}{75} = \frac{8}{75}$$
$$\approx 0.107 \text{ or } 10.7\%$$

• **Emily**

$$\frac{89 - 84}{84} = \frac{5}{84}$$
$$\approx 0.06 \text{ or } 6\%$$

• **Zachary**

$$\frac{91 - 63}{63} = \frac{28}{63}$$
$$\approx 0.444 \text{ or } 44.4\%$$

• **Karli**

$$\frac{95 - 88}{88} = \frac{7}{88}$$
$$\approx 0.08 \text{ or } 8\%$$

Zachary had the greatest percent of increase in test score. The answer is C.

### Example 4 Find Percent of Decrease

**ENROLLMENT** In 1998, Redview Elementary School had 418 students enrolled and in 1999, there were 354 students enrolled. What was the percent of change?

**Step 1** Subtract to find the amount of change.  
 $354 - 418 = -64$

**Step 2** Compare the amount of change to the 1998 enrollment.

$$\text{percent of change} = \frac{\text{amount of change}}{\text{1998 enrollment}}$$
$$= \frac{-64}{418} \quad \text{Substitution}$$
$$\approx -0.153 \text{ or } -15.3\% \quad \text{Write the decimal as a percent.}$$

The percent of change is -15.3%. In this case, the percent of change is a percent of decrease.