

# 9-10 Percent of Change (Pages 472–475)

The **percent of change** is the ratio of the amount of change to the original amount. When an amount increases, the percent of change is a **percent of increase**. When the amount decreases, the percent of change is negative. You can also state a negative percent of change as a **percent of decrease**.

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| <b>Finding Percent of Change</b> | Subtract (new – old) to find the amount of change. Then compare the amount of change to the original amount using the percent equation $P = R \cdot B$ . Solve for $R$ . |
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## EXAMPLES

**A** What is the percent of change from 30 to 24?

$$\begin{aligned} \text{Amount of change} &= \text{new} - \text{old} \\ &= 24 - 30 \text{ or } -6 \end{aligned}$$

$$P = R \cdot B \rightarrow -6 = R \cdot 30$$

$$\frac{-6}{30} = R$$

$$0.2 = R$$

The percent of change is  $-20\%$ .

The percent of decrease is  $20\%$ .

**B** What is the percent of change from 8 to 10?

$$\begin{aligned} \text{Amount of change} &= \text{new} - \text{old} \\ &= 10 - 8 \text{ or } 2 \end{aligned}$$

$$P = R \cdot B \rightarrow 2 = R \cdot 8$$

$$\frac{2}{8} = R$$

$$0.25 = R$$

The percent of change is  $25\%$ .

The percent of increase is  $25\%$ .

## PRACTICE

**State whether each percent of change is a percent of increase or a percent of decrease. Then find the percent of increase or decrease. Round to the nearest whole percent.**

- |   |                                      |                                       |
|---|--------------------------------------|---------------------------------------|
| 1. old: 2 rabbits<br>new: 13 rabbits          | 2. old: 125 people<br>new: 90 people | 3. old: 10 minutes<br>new: 25 minutes |
| 4. old: 1000 widgets<br>new: 540 widgets      | 5. old: \$5,000<br>new: \$4,700      | 6. old: 140 pounds<br>new: 155 pounds |
| 7. old: 15 centimeters<br>new: 17 centimeters | 8. old: \$32.99<br>new: \$23.09      | 9. old: \$1250<br>new: \$1310         |

**10. Safety** If a manufacturer reduces the number of on-the-job accidents from an average of 20 a month to an average of 6 a month, what is the percent of decrease in accidents?



**11. Standardized Test Practice** If the price of gas increases from \$1.01 per gallon to \$1.21 per gallon, what is the percent of increase?

- A** 19%                      **B** 20%                      **C** 21%                      **D** 22%

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| <b>Answers:</b> 1. increase: 550% 2. decrease: 28% 3. increase: 150% 4. decrease: 46% 5. decrease: 6% 6. increase: 11%<br>7. increase: 13% 8. decrease: 30% 9. increase: 5% 10. 70% decrease 11. B |
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