

4-5

NAME _____ DATE _____

Percent of Change (Pages 222–227)

Finding Percent of Change	percent of change = $\frac{\text{amount of change}}{\text{original amount}}$
	amount of change = original amount – new amount
	percent of decrease \Rightarrow new amount is less than original amount
	percent of increase \Rightarrow new amount is more than original amount

EXAMPLES

- A** Find the percent of change if the original price of an item is \$56 and the new price \$32. Is this change a percent of increase or decrease?

amount of change: $56 - 32$ or 24

$$\frac{\text{amount of change}}{\text{original amount}} = \frac{24}{56} \text{ or about } 0.43$$

The percent of change is 43%.

Since the new amount is less than the original amount, $32 < 56$, this is a percent of decrease.

- B** A book with an original price of \$15 is on sale at a discount of 25%. If the sales tax is 10%, what is the final price of the book?

$$\begin{aligned} \text{Discount} &= 25\% \text{ of original price} \\ &= 0.25 \cdot 15 \text{ or } \$3.75 \end{aligned}$$

$$\text{Sale price} = \$15 - \$3.75 \text{ or } \$11.25$$

$$\begin{aligned} \text{Tax} &= 10\% \text{ of sale price} \\ &= 0.10 \cdot \$11.25 \text{ or } \$1.13 \end{aligned}$$

$$\begin{aligned} \text{Final} &= \$11.25 + \$1.13 \\ &= \$12.38 \end{aligned}$$

Try This Together

1. original: 500 tons
new: 640 tons

Is this change a percent of increase or decrease? Find the percent of change.

HINT: Subtract to find the amount of change.

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.

2. original: 12 cm
new: 30 cm

3. original: 40 mph
new: 70 mph

4. original: \$14.99
new: \$8.99

5. original: 100 lb
new: 120 lb

6. original: 50¢
new: 69¢

7. original: 16 oz
new: 20 oz

Find the final price of each item.

8. printer: \$101.98
discount: 15%

9. notebook: \$1.49
sales tax: 7.5%

10. gum: \$0.45
sales tax: 8%



- 11. Standardized Test Practice** All shirts at a store are reduced by 40%. If sales tax is 8.5%, find the final price of a shirt that normally costs \$18.

A \$7.20

B \$10.80

C \$11.72

D \$19.53

Answers: 1. increase; 28% 2. increase; 150% 3. increase; 75% 4. decrease; 40% 5. increase; 20% 6. increase; 38% 7. increase; 25% 8. \$86.68 9. \$1.60 10. \$0.49 11. C