NAME _____ DATE _____ PERIOD _____

3-7 Percent of Change *(Pages 160–164)*

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 ⇒ new amount is less than original amount percent of increase ⇒ 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

$\frac{\text{amount of change}}{\text{original amount}} = \frac{24}{56}$ *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?

Discount = 25% of original price
= 0.25 ·15 or \$3.75
Sale price = \$15 − \$3.75 or \$11.25
Tax = 10% of sale price
= 0.10 · \$11.25 or \$1.13
Final = \$11.25 + \$1.13
= \$12.38

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