

FINDING A NEW AMOUNT If you know the original amount and the percent of change, you can find the new amount.

- For a $p\%$ increase, multiply the original amount by $(100\% + p\%)$.
- For a $p\%$ decrease, multiply the original amount by $(100\% - p\%)$.

EXAMPLE 2 Find a new amount

SHOPPING Find the sale price of the pair of jeans described in the table.

Original price	\$48.00
Discount	40%
Sale price	?

Solution

The sale price is a decrease from the original price, so multiply the original price by $(100\% - p\%)$.

$$\begin{aligned} \text{Sale price} &= \text{Original price} \cdot (100\% - p\%) \\ &= 48 \cdot (100\% - 40\%) && \text{Substitute.} \\ &= 48 \cdot 0.6 && \text{Subtract percents. Then write as a decimal.} \\ &= 28.8 && \text{Multiply.} \end{aligned}$$

▶ The sale price of the pair of jeans is \$28.80.

ANOTHER WAY

You can also find the sale price by first finding the change in price:

$$0.4 \cdot 48 = 19.2.$$

Then subtract the change in price from the original price:

$$\$48.00 - \$19.20 = \$28.80.$$

PRACTICE

EXAMPLE 1

on p. 182
for Exs. 1–6

Identify the percent of change as an *increase* or *decrease*. Then find the percent of change.

- | | | |
|-----------------------------|--------------------------------|--------------------------------|
| 1. Original: 16
New: 20 | 2. Original: 35
New: 49 | 3. Original: 80
New: 44 |
| 4. Original: 120
New: 78 | 5. Original: 360
New: 241.2 | 6. Original: 170
New: 283.9 |

EXAMPLE 2

on p. 183
for Exs. 7–14

Find the new amount.

- | | |
|------------------------|--------------------------|
| 7. Increase 14 by 45%. | 8. Increase 78 by 80%. |
| 9. Decrease 44 by 20%. | 10. Decrease 108 by 90%. |

11. **SUBWAY** The price for a token to ride a city's subway system is changing from \$1.25 to \$1.50. Find the percent of change.

12. **DVDS** The average price of a new DVD in 1998 was \$24. In 2003, the average price was \$21.12. Find the percent of change.

13. **POPULATION** In Arizona, the population increased by 48.6% from 1990 to 2002. Use the information in the table to find the population density in Arizona in 2002.

Year	Population density
1990	32.3 people per square mile
2002	?

14. **DEPRECIATION** A new car is valued at \$14,500. In one year, the car's value will depreciate, or decrease, by 15%. Find the value of the car after one year.