

4 Chapter Review



Review Key Vocabulary

percent, *p.* 160

percent of change, *p.* 166

percent of increase, *p.* 166

percent of decrease, *p.* 166

discount, *p.* 174

markup, *p.* 174

interest, *p.* 180

principal, *p.* 180

simple interest, *p.* 180

Review Examples and Exercises

4.1 The Percent Equation (*pp.* 158–163)

What number is 72% of 25?

$$a = p \cdot w$$

Write percent equation.

$$= 0.72 \cdot 25$$

Substitute 0.72 for *p* and 25 for *w*.

$$= 18$$

Multiply.

∴ So, 72% of 25 is 18.

28 is what percent of 70?

$$a = p \cdot w$$

Write percent equation.

$$28 = p \cdot 70$$

Substitute 28 for *a* and 70 for *w*.

$$0.4 = p$$

Divide each side by 70.

∴ Because $0.4 = 40\%$, 28 is 40% of 70.

22.1 is 26% of what number?

$$a = p \cdot w$$

Write percent equation.

$$22.1 = 0.26 \cdot w$$

Substitute 22.1 for *a* and 0.26 for *p*.

$$85 = w$$

Divide each side by 0.26.

∴ So, 22.1 is 26% of 85.

Exercises

Write and solve an equation to answer the question.

1. What number is 24% of 25?
2. 9 is what percent of 20?
3. 85% of what number is 10.2?
4. 83% of 20 is what number?
5. **PARKING** 15% of the school parking spaces are handicap spaces. The school has 18 handicap spaces. How many parking spaces are there?

4.2 Percents of Increase and Decrease (pp. 164–169)

The table shows the number of skim boarders at a beach on Saturday and Sunday. What was the percent of change in boarders from Saturday to Sunday?

The number of skim boarders on Sunday is less than the number of skim boarders on Saturday. So, the percent of change is a percent of decrease.

$$\text{percent of decrease} = \frac{\text{original amount} - \text{new amount}}{\text{original amount}}$$

Day	Number of Skim Boarders
Saturday	12
Sunday	9

$$= \frac{12 - 9}{12}$$

Substitute.

$$= \frac{3}{12}$$

Subtract.

$$= 0.25 = 25\%$$

Write as a percent.



∴ The number of skim boarders decreased by 25% from Saturday to Sunday.

Exercises

Identify the percent of change as an *increase* or *decrease*. Then find the percent of change. Round to the nearest tenth of a percent, if necessary.

- 6 yards to 36 yards
- 6 hits to 3 hits
- 120 meals to 52 meals
- 35 words to 115 words

4.3 Discounts and Markups (pp. 172–177)

What is the original price of the tennis racquet?

The sale price is $100\% - 30\% = 70\%$ of the original price.

Answer the question: 21 is 70% of what number?

$$a = p \cdot w \quad \text{Write percent equation.}$$

$$21 = 0.7 \cdot w \quad \text{Substitute 21 for } a \text{ and } 0.7 \text{ for } p.$$

$$30 = w \quad \text{Divide each side by } 0.7.$$

∴ The original price of the tennis racquet is \$30.



Exercises

Find the price.

- Original price: \$50
Discount: 15%
Sale price: ?
- Original price: ?
Discount: 20%
Sale price: \$75

4.4 Simple Interest (pp. 178–183)

You put \$200 in a savings account. The account earns 2% simple interest per year.

- What is the interest after 4 years?
- What is the balance after 4 years?

a. $I = Prt$ Write simple interest formula.
 $= 200(0.02)(4)$ Substitute 200 for P , 0.02 for r , and 4 for t .
 $= 16$ Multiply.

∴ The interest earned is \$16 after 4 years.

- b. The balance is the principal plus the interest.

∴ So, the balance is $\$200 + \$16 = \$216$ after 4 years.

You put \$500 in an account. The account earns \$55 simple interest in 5 years. What is the annual interest rate?

$I = Prt$ Write simple interest formula.
 $55 = 500(r)(5)$ Substitute 55 for I , 500 for P , and 5 for t .
 $55 = 2500r$ Simplify.
 $0.022 = r$ Divide each side by 2500.

∴ The annual interest rate of the account is 0.022, or 2.2%.

Exercises

An account earns simple interest.

- Find the interest earned.
- Find the balance of the account.

12. \$300 at 4% for 3 years

13. \$2000 at 3.5% for 4 years

Find the annual simple interest rate.

14. $I = \$17$, $P = \$500$, $t = 2$ years

15. $I = \$426$, $P = \$1200$, $t = 5$ years

Find the amount of time.

16. $I = \$60$, $P = \$400$, $r = 5\%$

17. $I = \$237.90$, $P = \$1525$, $r = 2.6\%$

18. **SAVINGS** You put \$100 in an account. The account earns \$2 simple interest in 6 months. What is the annual interest rate?