6-5 Using the Percent Proportion *(Pages 288–292)*

A percent is a ratio that compares a number to 100. Percent also means *hundredths*, or *per hundred*. The symbol for percent is %.

The Percent Proportion	The **percent proportion** is $\dfrac{part}{base} = \dfrac{percent}{100}$. In symbols $\dfrac{a}{b} = \dfrac{p}{100}$, where a is the part, b is the base, and p is the percent.

Examples

a. Express $\dfrac{2}{5}$ as a percent.

$\dfrac{a}{b} = \dfrac{p}{100} \rightarrow \dfrac{2}{5} = \dfrac{p}{100}$ *Replace a with 2 and b with 5.*

$2 \cdot 100 = 5 \cdot p$ *Find the cross products.*

$\dfrac{200}{5} = \dfrac{5p}{5}$ *Divide each side by 5.*

$40 = p$

$\dfrac{2}{5}$ is equivalent to 40%.

b. 13 is 26% of what number?

$\dfrac{a}{b} = \dfrac{p}{100} \rightarrow \dfrac{13}{b} = \dfrac{26}{100}$ *Replace a with 2 and p with 26.*

$13 \cdot 100 = b \cdot 26$ *Find the cross products.*

$\dfrac{1300}{26} = \dfrac{26b}{26}$ *Divide each side by 26.*

$50 = b$

13 is 26% of 50.

Try These Together

1. Express $\dfrac{5}{8}$ as a percent.

   HINT: Use the proportion $\dfrac{5}{8} = \dfrac{p}{100}$.

2. What is 30% of 20?

   HINT: The value after the word "of" is usually the base.

Practice

Express each fraction as a percent.

3. $\dfrac{6}{4}$ **4.** $\dfrac{3}{10}$ **5.** $\dfrac{3}{8}$ **6.** $\dfrac{4}{25}$ **7.** $\dfrac{17}{20}$ **8.** $\dfrac{8}{5}$

Use the percent proportion to solve each problem.

9. 14 is what percent of 50?

10. 27 is what percent of 90?

11. 120 is what percent of 200?

12. 14 is 20% of what number?

13. 17 is 8.5% of what number?

14. 43 is 10% of what number?

15. What is 8% of 75?

16. What is 300% of 12?

17. Find 51% of $80.

18. Find 30% of $10.69.

19. Retail   A pair of $32 jeans is marked down 40%. What is 40% of $32? What is the price of the jeans after the reduction?

20. Standardized Test Practice   Bonnie got 12 out of 16 questions correct on her math quiz. What percent did she get correct?

   A $133\dfrac{1}{3}\%$ **B** 75%   **C** 60%   **D** 25%

Answers: 1. 62.5%   2. 6   3. 150%   4. 30%   5. 37.5%   6. 16%   7. 85%   8. 160%   9. 28%   10. 30%   11. 60%   12. 70
13. 200   14. 430   15. 6   16. 36   17. $40.80   18. $3.21   19. $12.80; $19.20   20. B