Name _____

Key Concept and Vocabulary

You can use a proportion to represent "a is p percent of w."

Proportion

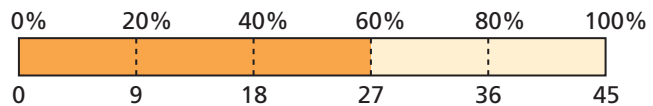part of the whole → $\dfrac{a}{w} = \dfrac{p}{100}$ ← percent

whole

Visual Model

0%	20%	40%	60%	80%	100%
0	9	18	27	36	45

27 is 60% of 45.

Skill Examples

1. $\dfrac{36}{50} = \dfrac{p}{100}$

    $100 \cdot \dfrac{36}{50} = 100 \cdot \dfrac{p}{100}$

    $72 = p$

    ∴ So, 36 is 72% of 50.

2. $\dfrac{a}{36} = \dfrac{20}{100}$

    $36 \cdot \dfrac{a}{36} = 36 \cdot \dfrac{20}{100}$

    $a = 7.2$

    ∴ So, 7.2 is 20% of 36.

Application Example

3. A basketball player makes 45%, or 9 shots, of her attempted shots. How many shots did the basketball player attempt?

    $\dfrac{9}{w} = \dfrac{45}{100}$

    $9 \cdot 100 = w \cdot 45$

    $900 = 45w$

    $\dfrac{900}{45} = \dfrac{45w}{45}$

    $20 = w$

    ∴ The basketball player attempted 20 shots.

PRACTICE MAKES *PURR*-FECT®

Check your answers at BigIdeasMath.com.

Write and solve a proportion to answer the question.

4. 68 is what percent of 80?

    $\dfrac{68}{80} = \dfrac{p}{100}$; 85%

5. What number is 25% of 116?

    $\dfrac{a}{116} = \dfrac{25}{100}$; 29

6. 36 is 16% of what number?

    $\dfrac{36}{w} = \dfrac{16}{100}$; 225

7. 48 is what percent of 128?

    $\dfrac{48}{128} = \dfrac{p}{100}$; 37.5%

8. What number is 64% of 40?

    $\dfrac{a}{40} = \dfrac{64}{100}$; 25.6

9. 77 is 55% of what number?

    $\dfrac{77}{w} = \dfrac{55}{100}$; 140

10. **PLAY** Students are auditioning for a play. Of the 60 students auditioning, 12 will get a part in the play. What percent of the students who audition will get a part in the play?

    20%

11. **HOMEWORK** You have completed 60% of your English homework. The assignment has 25 questions. How many questions are left? ____10 questions____