SCHOLASTIC MATH
Where Math Gets Real™

Name: _____

Scaling Equivalent Fractions

In "Grimy Ride" on page 6, you found the percent of a number by multiplying the percent's equivalent decimal by the number. Percents also have equivalent fractions, which can be used to find the percent of a number. *Percent* means "out of 100," so you can write a percent as a fraction with a denominator of 100.

EXAMPLE:

Lewis took a math test that had 25 questions, all weighted equally. His grade on the test was 84%. How many questions did Lewis answer correctly?

STEP 1: Write the percentage as a fraction:

$$84\% = \frac{84}{100}$$

STEP 2: Write a part-to-whole proportion using the percent's equivalent fraction. For the unknown value (the number of questions Lewis answered correctly), use a variable:

$$\begin{array}{l}\text{part} \longrightarrow \\ \text{whole} \longrightarrow\end{array} \frac{84}{100} = \frac{x}{25} \begin{array}{l}\longleftarrow \text{part} \\ \longleftarrow \text{whole}\end{array}$$

STEP 3: Scale the percent's equivalent fraction up or down so that the denominator matches the denominator of the other side of the proportion:

$$\frac{84 \div 4}{100 \div 4} = \frac{x}{25} = \frac{21}{25}$$

So 21 is 84% of 25. That tells us that Lewis answered 21 of the 25 questions correctly.

YOUR TURN ✎

1. Matthew buys a pair of jeans for $50. There is a 7% sales tax added to the price of the jeans. How much sales tax does Matthew have to pay?

2. Out of a group of 400 basketball players, 15% are centers. How many of the players are centers?

3. At a middle school of 250 students, 48% of the students own pets. How many students is that?

4. A veterinarian sees 16 pets in one day. If 37.5% of her clients that day are cats, how many cats does the veterinarian see? [Hint: What number do you have to multiply 16 by to get 100? Use fact families to help you: What is 100 ÷ 16?]

5. Angelica took a science test that had 32 questions. She answered 87.5% of the questions correctly. How many questions did Angelica answer correctly?

SCHOLASTIC
MATH®
Where Math Gets Real™

Name: _____

Subway Samples

In "Grimy Ride" on page 6, you found percent of a number to uncover the findings of a recent study of microbes found across New York City's subways. Use what you learned to answer five more percent questions about what researchers found in the transit system. Round all answers to the nearest whole number or percent.

1A. About 47% of the 15,152 DNA samples researchers found were bacteria. What percent of the samples were not bacteria?

B. What number of the DNA samples were not bacteria?

2. Researchers found bacteria associated with "fermented cabbage dishes like kimchi (a popular Korean dish) and sauerkraut (a classic hot dog topping) in about 11% of the 466 subway stations surveyed. About how many stations was this?

3. Researchers found bacteria associated with Swiss cheese in just 2% of the 466 subway stations surveyed. About how many stations was this?

4. A bacterium associated with sepsis, a potentially fatal medical condition, was discovered in 10% of the 466 stations. About how many stations was this?

5. Of the 466 stations surveyed, 453 were free of a bacterium associated with the deadly brain disease meningitis. What percent of stations were contaminated with this bacterium?