

Lesson 6-11

Reinforce Understanding

Fraction Division Problem Solving

I can solve real-world problems by writing and solving fraction division equations.

Worked model

Agent Torres has $\frac{2}{3}$ gallon of dust and each test uses $\frac{1}{6}$ gallon. I ask: how many tests fit?

1. The total $\frac{2}{3}$ is the dividend. The size of each test $\frac{1}{6}$ is the divisor. My equation is $\frac{2}{3} \div \frac{1}{6}$.
2. Keep $\frac{2}{3}$, change to $\times$, flip $\frac{1}{6}$ to $\frac{6}{1}$: $\frac{2}{3} \times \frac{6}{1} = \frac{12}{3} = 4$.
3. So she can run 4 tests. I check by multiplying back: $4 \times \frac{1}{6} = \frac{4}{6} = \frac{2}{3}$. It matches the total, so the answer is reasonable.

Practice

Complete each exercise. Show the reasoning that supports your answer.

1. Sort each word problem: should you DIVIDE or MULTIPLY to solve it?

Write the name of the correct group on each line.

Groups: Division Problem Multiplication Problem

- _____ How many $\frac{1}{3}$ -cup scoops fit into 2 cups? ($2 \div \frac{1}{3}$)
- _____ A ribbon is $\frac{3}{4}$ yard. Each piece is $\frac{1}{8}$ yard. How many pieces? ($\frac{3}{4} \div \frac{1}{8}$)
- _____ You run $\frac{1}{2}$ mile, 3 times. How far total? ($\frac{1}{2} \times 3$)
- _____ A recipe uses $\frac{2}{3}$ cup. You make half a recipe. How much? ($\frac{2}{3} \times \frac{1}{2}$)

2. A ribbon is $\frac{4}{5}$ of a yard long. Each bow uses $\frac{1}{10}$ of a yard. Which equation finds how many bows can be made?

Circle the letter of the best answer. Show how you know.

- A. $\frac{1}{10} \div \frac{4}{5}$
- B. $\frac{4}{5} \div \frac{1}{10}$
- C. $\frac{4}{5} \times \frac{1}{10}$
- D. $\frac{4}{5} + \frac{1}{10}$

Show your work

3. A detective has $\frac{1}{2}$ gallon of solution. Each test uses $\frac{1}{8}$ gallon. How many tests can be run?

Circle the letter of the best answer. Show how you know.

- A. $\frac{1}{16}$
- B. $\frac{1}{4}$
- C. 4
- D. 16