

## Lesson 1: Interpreting Division of a Fraction by a Whole

### Number—Visual Models

#### Classwork

##### Opening Exercise

**A**

Write a division sentence to solve each problem.

- 8 gallons of batter are poured equally into 4 bowls.  
How many gallons of batter are in each bowl?
- 1 gallon of batter is poured equally into 4 bowls.  
How many gallons of batter are in each bowl?

Write a division sentence *and* draw a model to solve.

- 3 gallons of batter are poured equally into 4 bowls.  
How many gallons of batter are in each bowl?

**B**

Write a multiplication sentence to solve each problem.

- One fourth of an 8-gallon pail is poured out.  
How many gallons are poured out?
- One fourth of a 1-gallon pail is poured out.  
How many gallons are poured out?

Write a multiplication sentence *and* draw a model to solve.

- One fourth of a 3-gallon pail is poured out.  
How many gallons are poured out?

**Example 1**

$\frac{3}{4}$  gallon of batter is poured equally into 2 bowls. How many gallons of batter are in each bowl?

**Example 2**

$\frac{3}{4}$  pan of lasagna is shared equally by 6 friends. What fraction of the pan will each friend get?

**Example 3**

A rope of length  $\frac{2}{5}$  m is cut into 4 equal cords. What is the length of each cord?

**Exercises 1–6**

Fill in the blanks to complete the equation. Then, find the quotient and draw a model to support your solution.

1.  $\frac{1}{2} \div 3 = \frac{\square}{2} \times \frac{1}{2}$

2.  $\frac{1}{3} \div 4 = \frac{1}{4} \times \frac{1}{\square}$

Find the value of each of the following.

3.  $\frac{1}{4} \div 5$

4.  $\frac{3}{5} \div 5$

5.  $\frac{1}{5} \div 4$

Solve. Draw a model to support your solution.

6.  $\frac{3}{5}$  pt. of juice is poured equally into 6 glasses. How much juice is in each glass?

**Problem Set**

Find the value of each of the following in its simplest form.

1.
  - a.  $\frac{1}{3} \div 4$
  - b.  $\frac{2}{5} \div 4$
  - c.  $\frac{4}{7} \div 4$
  
2.
  - a.  $\frac{2}{5} \div 3$
  - b.  $\frac{5}{6} \div 5$
  - c.  $\frac{5}{8} \div 10$
  
3.
  - a.  $\frac{6}{7} \div 3$
  - b.  $\frac{10}{8} \div 5$
  - c.  $\frac{20}{6} \div 2$
  
4. 4 loads of stone weigh  $\frac{2}{3}$  ton. Find the weight of 1 load of stone.
  
5. What is the width of a rectangle with an area of  $\frac{5}{8}$  in<sup>2</sup> and a length of 10 inches?
  
6. Lenox ironed  $\frac{1}{4}$  of the shirts over the weekend. She plans to split the remainder of the work equally over the next 5 evenings.
  - a. What fraction of the shirts will Lenox iron each day after school?
  - b. If Lenox has 40 shirts, how many shirts will she need to iron on Thursday and Friday?
  
7. Bo paid bills with  $\frac{1}{2}$  of his paycheck and put  $\frac{1}{5}$  of the remainder in savings. The rest of his paycheck he divided equally among the college accounts of his 3 children.
  - a. What fraction of his paycheck went into each child's account?
  - b. If Bo deposited \$400 in each child's account, how much money was in Bo's original paycheck?