

Grade 6 • Unit 4 Worksheet

Dividing Fractions

Name: _____

Date: _____

Part A • Meanings of Division

Division can be asking 'how many groups?' or 'how much in each group?' — both matter.

1. For the expression $12 \div 4$, write TWO different word problems: one that asks 'how many groups of 4' and one that asks 'how much per group if there are 4 groups.'

Story 1 (how many groups of 4):

Story 2 (how much per group):

Both stories have the answer _____.

2. Without computing, predict whether each quotient is greater than 1 or less than 1. Then explain.

a. $5 \div (1/3) \rightarrow \square > 1 \quad \square < 1$. Why?

b. $(1/4) \div 8 \rightarrow \square > 1 \quad \square < 1$. Why?

c. $(3/4) \div (1/4) \rightarrow \square > 1 \quad \square < 1$. Why?

Part B • Dividing by Fractions with Diagrams

3. How many $1/3$ -cup servings are in 5 cups of soup?

Draw a tape diagram or other model to show your thinking:

Write a multiplication equation AND a division equation:

Answer: _____ servings

4. A rope is 6 feet long. If you cut it into pieces that are $\frac{3}{4}$ feet each, how many pieces will you get?

Reasoning (with diagram or equation):

Answer: _____ pieces

Part C • The Algorithm

5. Find each quotient. Show your work.

a. $(\frac{3}{4}) \div (\frac{2}{3}) =$ _____

b. $(\frac{5}{6}) \div (\frac{1}{2}) =$ _____

c. $4 \div (\frac{2}{5}) =$ _____

d. $(\frac{7}{8}) \div 2 =$ _____

6. Show that $(\frac{2}{3}) \div (\frac{4}{5})$ is equivalent to $(\frac{2}{3}) \times (\frac{5}{4})$. Use a diagram, an equivalent expression, or a written explanation.

Part D • Geometry with Fractions

7. A rectangle has area $\frac{5}{8}$ square meter and width $\frac{1}{4}$ meter. What is its length?

Write an equation:

Solve:

Length = _____ meters

8. A rectangular prism has volume $3\frac{1}{2}$ cubic feet, length 2 feet, and width $1\frac{1}{4}$ feet. What is its height?

Show your work:

Height = _____ feet

Part E • Error Analysis & Reasoning

9. Han computed $(\frac{1}{2}) \div (\frac{1}{4})$ as follows: 'Half of one fourth is one eighth, so the answer is $\frac{1}{8}$.' Is Han correct?

☐ Yes ☐ No

What is the correct answer? _____

Explain Han's mistake (what division situation did he actually compute?):

10. Show two different ways to find $(3/4) \div (1/8)$. Which way did you find more efficient?

Way 1 (draw a model):

Way 2 (use the algorithm):

More efficient & why:

Part F • Thinking Deeply

11. Write your own word problem that requires dividing $2/3$ by $1/6$. Then solve it.

My problem:

Solution:
