

# Word Problems: Multiplying Fractions

Grade 5 Math • Section 5.6

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Score: \_\_\_\_\_ / 10

## Quick Review and Helpful Hints

- Clue words for multiplication:** “of,” “each,” “per,” “part of a group.” “ $\frac{1}{3}$  of 12” means  $\frac{1}{3} \times 12$ .
- Draw a picture or model if the problem involves finding a fraction **of** a fraction.
- Always simplify your final answer and make sure it is reasonable.

**Example:** A painter can finish  $\frac{3}{5}$  of a wall per hour. How much of the wall can he paint in  $\frac{1}{2}$  hour?

“ $\frac{1}{2}$  of  $\frac{3}{5}$ ” =  $\frac{1}{2} \times \frac{3}{5} = \frac{3}{10}$  of the wall.

**Answer:**  $\frac{3}{10}$  of the wall

## Practice Problems

Solve each word problem. Show your work.

1. A park covers  $\frac{3}{4}$  of a square mile. A pond covers  $\frac{2}{5}$  of the park. What fraction of a square mile is the pond?  
\_\_\_\_\_
2. A roll of fabric is 12 yards long. A tailor uses  $\frac{5}{8}$  of the roll. How many yards did the tailor use?  
\_\_\_\_\_
3. Maria reads  $\frac{2}{3}$  of a book on Monday. On Tuesday she reads  $\frac{1}{4}$  of what is left. What fraction of the whole book did she read on Tuesday?  
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4. A brownie recipe uses  $1\frac{1}{2}$  cups of sugar. Jen wants to make  $\frac{2}{3}$  of the recipe. How much sugar does she need?  
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5. A field is  $4\frac{1}{3}$  acres. A farmer plants corn on  $\frac{3}{4}$  of the field. How many acres of corn are planted?  
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6. There are 30 students in a class.  $\frac{2}{5}$  are on the soccer team. Of those,  $\frac{1}{4}$  are goalkeepers. How many goalkeepers are there?  
\_\_\_\_\_
7. A rectangular garden is  $\frac{3}{4}$  yard wide and  $\frac{5}{6}$  yard long. What is the area in square yards?  
\_\_\_\_\_
8. A car travels 55 miles per hour. How far does it go in  $\frac{3}{4}$  of an hour?  
\_\_\_\_\_

## Word Problems

9. A pool is  $\frac{4}{5}$  full. After a hot day,  $\frac{1}{3}$  of the water evaporates. What fraction of the pool's capacity remains?  
\_\_\_\_\_
10. A school has 240 students.  $\frac{3}{8}$  of them play a sport. Of those,  $\frac{2}{3}$  play soccer. How many students play soccer?  
\_\_\_\_\_



## Answer Keys

1.  $\frac{3}{10}$

2.  $7\frac{1}{2}$  yd

3.  $\frac{1}{12}$

4. 1 cup

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

6. 3

7.  $\frac{5}{8}$  yd<sup>2</sup>

8.  $41\frac{1}{4}$  mi

9.  $\frac{8}{15}$

10. 60

### Step-by-Step Explanations

1. Start with the main idea. For multiplying fractions, the pond is  $\frac{2}{5}$  of  $\frac{3}{4}$ :  $\frac{3}{4} \times \frac{2}{5} = \frac{3}{10}$ . Fractions are easier to combine when the pieces are the same size.

2. Keep the work tidy. For multiplying fractions,  $\frac{5}{8} \times 12 = \frac{60}{8} = 7\frac{1}{2}$ . Always simplify at the end so the answer is clean and useful.

3. Look at what the numbers mean. For multiplying fractions, after Monday,  $\frac{1}{3}$  remains; Tuesday is  $\frac{1}{4}$  of that, or  $\frac{1}{12}$ . For mixed numbers, converting to improper fractions can make the arithmetic calmer.

4. Use the setup first. For multiplying fractions,  $\frac{2}{3}$  of  $1\frac{1}{2}$  is  $\frac{2}{3} \times \frac{3}{2} = 1$ . Fractions are easier to combine when the pieces are the same size.

5. Check the size of the answer. For multiplying fractions,  $4\frac{1}{3} \times \frac{3}{4} = \frac{13}{3} \times \frac{3}{4} = \frac{13}{4} = 3\frac{1}{4}$ . Always simplify at the end so the answer is clean and useful.

6. Match the operation to the words. For multiplying fractions,  $\frac{2}{5}$  of 30 is 12 soccer players;  $\frac{1}{4}$  of 12 is 3. For mixed numbers, converting to improper fractions can make the arithmetic calmer.

7. Write the important values first. For multiplying fractions, area is  $\frac{3}{4} \times \frac{5}{6} = \frac{15}{24} = \frac{5}{8}$ . Fractions are easier to combine when the pieces are the same size.

8. Follow the pattern carefully. For multiplying fractions,  $55 \times \frac{3}{4} = \frac{165}{4} = 41\frac{1}{4}$ . Always simplify at the end so the answer is clean and useful.

9. Start with the main idea. For multiplying fractions, if  $\frac{1}{3}$  of the water evaporates,  $\frac{2}{3}$  remains;  $\frac{4}{5} \times \frac{2}{3} = \frac{8}{15}$ . For mixed numbers, converting to improper fractions can make the arithmetic calmer.

10. Keep the work tidy. For multiplying fractions,  $\frac{3}{8}$  of 240 is 90 athletes;  $\frac{2}{3}$  of 90 is 60 soccer players. Fractions are easier to combine when the pieces are the same size.



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