Unit 6 · Multiplying and Dividing Fractions Cheat Sheet

Unit 6 focus: fractions as division and multiplying fractions

1 Big Idea

A fraction is a division: a/b = a ÷ b. To multiply fractions, multiply the numerators and multiply the denominators.

2 Important Vocabulary

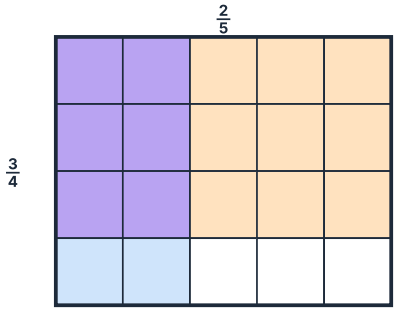
fraction as division	a/b means a ÷ b.	$\frac{3}{4} = 3 \div 4$
product	The answer to a multiplication problem.	$\frac{1}{2} \times \frac{3}{5} = \frac{3}{10}$
factor	A number being multiplied.	In $\frac{2}{3} \times 6$, the factors are $\frac{2}{3}$ and 6
whole number	A number like 0, 1, 2, 3, … with no fraction part.	7

3 How It Works

Multiply $\frac{3}{4} \times \frac{2}{5}$.

Example: $\frac{3}{4} \times \frac{2}{5}$
Numerators: $3 \times 2 = 6$
Denominators: $4 \times 5 = 20$
Simplify: $\frac{6}{20} = \frac{3}{10}$
Answer: $\frac{3}{10}$

4 Visual Model



The overlap is 6 of 20 parts: $\frac{3}{4} \times \frac{2}{5} = \frac{6}{20} = \frac{3}{10}$.

5 ★ Remember This · Watch Out!

★ Remember this

- "Of" means multiply: $\frac{2}{3}$ of 9 = 6.
- $5 \div 8 = \frac{5}{8}$, and $17 \div 5 = 3\frac{2}{5}$.

⚠ Watch out!

- **Cross-multiplying:** multiply straight across
- **Adding denominators:** $\frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$, not $\frac{1}{5}$

6 Try It!

1. $\frac{2}{3} \times 15 = ?$
   Answer: 10
2. 4 friends share 7 pizzas. How much each?
   Answer: sɐzzɪd $\frac{\text{ɾ}}{\text{ɛ}}$ı

Answers are printed upside down. Turn the page to check!

Unit 6 · Multiplying and Dividing Fractions Cheat Sheet

More practice: area, scaling, and dividing with unit fractions

1 Big Idea

Multiplying by a fraction less than 1 shrinks a number; greater than 1 grows it. Dividing by a unit fraction asks how many pieces fit.

2 Important Vocabulary

scaling	Resizing a number by multiplying by a factor.	$\frac{1}{2} \times 8$ is half of 8
unit fraction	A fraction with a numerator of 1.	$\frac{1}{5}$
area	The number of square units that cover a flat shape.	$\frac{1}{2}$ ft $\times$ $\frac{1}{3}$ ft = $\frac{1}{6}$ square foot
quotient	The answer to a division problem.	$4 \div \frac{1}{2} = 8$

3 How It Works

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

Example: How many fourths are in 3?
Each whole has 4 fourths: 3×4

Answer: 12

4 Visual Model



$\frac{1}{3} \div 2 = \frac{1}{6}$: one third split into 2 equal parts.

5 Remember This · Watch Out!

★ Remember this

- Area of a rectangle = length × width, even with fractions.
- Check: $12 \times \frac{1}{4} = 3$ and $\frac{1}{6} \times 2 = \frac{1}{3}$.

⚠ Watch out!

- **Dividing makes smaller?:** $6 \div \frac{1}{2} = 12$ is bigger than 6
- **Mixed numbers:** write them as fractions before multiplying

6 Try It!

1. $\frac{1}{2} \times \frac{3}{4}$ square foot rectangle area?
   Answer: $\frac{3}{8}$ square foot
2. $\frac{1}{5} \div 3 = ?$
   Answer: $\frac{1}{15}$

Answers are printed upside down. Turn the page to check!