

MULTIPLYING AND DIVIDING FRACTIONS

What Is Multiplying and Dividing Fractions with Unlike Denominators?

- When two fractions have unlike denominators, multiply the numerators and multiply the denominators to find the product.

For example: $\frac{3}{5} \times \frac{2}{3} = \frac{6}{15}$

- When two fractions have unlike denominators, invert the divisor and multiply the two fractions.

For example: $\frac{2}{9} \div \frac{3}{5} \rightarrow \frac{2}{9} \times \frac{5}{3} = \frac{10}{27}$



PREVIEW

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- To **divide** two fractions with unlike denominators,
 - First invert the divisor.

$$\frac{1}{3} \div \frac{1}{2} \rightarrow \text{invert } \frac{1}{2} \text{ to } \frac{2}{1}$$

- After inverting the divisor, multiply the fractions

$$\frac{1}{3} \div \frac{1}{2} \rightarrow \frac{1}{3} \times \frac{2}{1} = \frac{2}{3}$$

- Any number divided by 1 equals that number:

$$5 \div 1 = 5$$

$$34 \div 1 = 34$$

$$\frac{1}{6} \div 1 = \frac{1}{6}$$

- Sometimes, the product resulting from multiplication or division can be **reduced**. This means dividing by one to make the denominator a lower value.

For example, $\frac{8}{10}$ can be reduced to $\frac{4}{5}$ by dividing by $\frac{2}{2}$ (an equivalent of 1).

$$\frac{12}{15} \rightarrow \frac{4}{5}$$

Divide both numerator and denominator by 3.

$$\frac{30}{35} \rightarrow \frac{6}{7}$$

Divide both numerator and denominator by 5.



PREVIEW

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Multiply and reduce to lowest terms: $\frac{6}{7} \times \frac{1}{3} =$

Divide and reduce to lowest terms: $\frac{3}{5} \div \frac{2}{3} =$

Divide and reduce to lowest terms: $\frac{1}{2} \div \frac{4}{5} =$
