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Flip

For Math

A Step-By-Step Guide for Multiplying Fractions

(How to Multiply a Fraction & Whole Number,
Two Fractions, or Two Mixed Numbers)

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Multiply a Fraction & A Whole Number

Step 1

Write the whole number as a fraction.

Example Problem: $\longrightarrow 2 \times \frac{1}{8}$

Whole number '2'
written as a fraction. $\longrightarrow \frac{2}{1} \times \frac{1}{8}$

Step 2

Multiply the numerators together.
Multiply the denominators together.

$$\begin{array}{l} \text{Numerators} \\ \text{Denominators} \end{array} \begin{array}{c} \cancel{2} \times \cancel{1} \\ \cancel{1} \times \cancel{8} \end{array} = \frac{2}{8}$$

Step 3

Check your answer. If it is an
improper fraction, change it to a
mixed number. If it is not in lowest
terms, simplify.

$$\frac{2}{8} \div 2 = \frac{1}{4}$$

Final Answer

The fraction $\frac{2}{8}$ is not in lowest terms and can
be simplified.

Multiply Two Fractions

Step 1

Example Problem: $\longrightarrow \frac{3}{5} \times \frac{5}{8}$

Multiply the numerators together.
Multiply the denominators together.

$$\begin{array}{l} \text{Numerators} \quad \frac{3}{\cancel{5}} \times \frac{\cancel{5}}{8} = \frac{15}{40} \\ \text{Denominators} \quad \frac{5}{\cancel{5}} \times \frac{\cancel{8}}{8} = \frac{40}{40} \end{array}$$

Step 2

Check your answer. If it is an improper fraction, change it to a mixed number. If it is not in lowest terms, simplify.

Final Answer

$$\frac{15}{40} \div 5 = \frac{3}{8}$$

The fraction $\frac{15}{40}$ is not in lowest terms and can be simplified.

Multiply Mixed Numbers

Step 1

Example Problem: $\longrightarrow 3\frac{2}{3} \times 2\frac{3}{7}$

Write each mixed number as an improper fraction.

$$3\frac{2}{3} = \frac{3 \times 3 + 2}{3} = \frac{11}{3}$$

$$2\frac{3}{7} = \frac{7 \times 2 + 3}{7} = \frac{17}{7}$$

Step 2

Rewrite the multiplication problem horizontally using the improper fractions.

$$\frac{11}{3} \times \frac{17}{7}$$

Step 3

Multiply the numerators together.
Multiply the denominators together.

$$\begin{array}{l} \text{Numerators} \\ \text{Denominators} \end{array} \begin{array}{c} \xrightarrow{11} \times \xrightarrow{17} \\ \xrightarrow{3} \times \xrightarrow{7} \end{array} = \frac{187}{21}$$

Step 4

Check your answer. If it is an improper fraction, change it to a mixed number.

$$\begin{array}{r} 187 \\ \hline 21 \end{array}$$

← Dividend
← Divisor

The fraction $\frac{187}{21}$ is an improper fraction and must be changed to the mixed number.

$$\begin{array}{r} 8 \\ \hline 21 \overline{)187} \\ \underline{-168} \\ 19 \end{array}$$

← Whole Number
← Numerator
Denominator

$8 \frac{19}{21}$ Mixed Number

Step 5

Check your answer. If the fraction is not reduced to lowest terms, you must simplify.

Final Answer

$$8 \frac{19}{21}$$

Since the numerator and the denominator do not share a common factor, the fraction is simplified to lowest terms.

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for Dividing
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