

Multiply/Divide Fractions

Multiplying Fractions

Rule: Multiply Across, don't forget to simplify

Example Method 2: Using Prime Factorization

$$\begin{aligned} & \frac{3}{10} \cdot \frac{5}{9} && \text{Multiplication} \\ = & \frac{3}{2 \cdot 5} \cdot \frac{5}{3 \cdot 3} && \text{Find Prime Factorization} \\ = & \frac{\cancel{3}}{2 \cdot \cancel{5}} \cdot \frac{\cancel{5}}{\cancel{3} \cdot 3} && \text{Divide Out Common Factors} \\ = & \frac{1}{2} \cdot \frac{1}{3} && \text{Multiply Across Remaining Factors} \\ \frac{3}{10} \cdot \frac{5}{9} = & \frac{1}{6} && \text{Result} \end{aligned}$$

Example Method 1: Multiply, then simplify by finding GCF



Multiply/Divide Fractions

Dividing Fractions

Rule: KFC, don't forget to simplify

Example Method 2: KFC and Prime Factorization

$$\frac{1}{6} \div \frac{7}{12}$$

Division

$$= \frac{1}{6} \cdot \frac{12}{7}$$

KFC: Keep First, Flip Second, Change $\div \rightarrow \times$

$$= \frac{1}{2 \cdot 3} \cdot \frac{2 \cdot 2 \cdot 3}{7}$$

Find Prime Factorization

$$= \frac{1}{\cancel{2} \cdot 3} \cdot \frac{\cancel{2} \cdot 2 \cdot \cancel{3}}{7}$$

Divide Out Common Factors

$$= \frac{1}{1} \cdot \frac{2}{7}$$

Multiply Across Remaining Factors

$$\frac{1}{6} \div \frac{7}{12} = \frac{2}{7}$$

Result

Example Method 1: Divide, then simplify by finding GCF

Example: Divide using a basic 4-function calculator

Example: Divide using a ti-83/84 calculator, two different ways

Video:

