Fractions: Multiply & Divide

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How to multiply fractions:

1. Multiply across the fractions; numerator times numerator, denominator times denominator.

$\frac{3}{5} * \frac{1}{2} = \frac{3}{10}$
3 * 1 = 3
5 * 2 = 10

$\frac{2}{7} * \frac{3}{8} = \frac{6}{56}$
2 * 3 = 6
7 * 8 = 56

2. Simplify the fraction if the numerator is divisible by or equal to the denominator.

$\frac{3}{10}$ Not divisible, so no simplification $\frac{6}{56} = \frac{3}{28}$ 6 and 56 are divisible by 2.

Guided Problems:

A) $\frac{2}{7} * \frac{1}{3} = ?$

B) $\frac{1}{5} * \frac{10}{12} = ?$

1. Multiply across the fractions.

A) $\frac{2}{7} * \frac{1}{3} = -$
2 * 1 = ___
7 * 3 = ___

B) $\frac{1}{5} * \frac{10}{12} = -$
1 * 10 = ___
5 * 12 = ___

2. Simplify if possible.

A) $- = -$ **or** No simplification B) $- = -$ **or** No simplification

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Practice Problems:

A) $\frac{2}{4} * \frac{1}{2} = ?$

B) $\frac{3}{7} * \frac{2}{9} = ?$

C) $\frac{1}{2} * \frac{4}{8} = ?$

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How to divide fractions:

1. Reverse the second fraction (flip the numerator and denominator). This changes the problem from division to multiplication.

$\frac{5}{3} / \frac{1}{7} = \frac{5}{3} * \frac{7}{1}$ $\frac{1}{10} / \frac{3}{2} = \frac{1}{10} * \frac{2}{3}$

2. Multiply across the fractions, just as in multiplication.

$\frac{5}{3} * \frac{7}{1} = \frac{35}{3}$
5 * 7 = 35
3 * 1 = 3

$\frac{1}{10} * \frac{2}{3} = \frac{2}{30}$
1 * 2 = 2
10 * 3 = 30

3. Simplify the fraction if the numerator is divisible by or equal to the denominator.

$\frac{35}{3}$ Not divisible, so no simplification $\frac{2}{30} = \frac{1}{15}$ 2 and 56 are divisible by 2.

Guided Problems:

A) $\frac{1}{5} / \frac{4}{7} = ?$ B) $\frac{2}{7} / \frac{4}{3} = ?$

1. Reverse the second fraction. A) $\frac{1}{5} / \frac{4}{7} = \_ * \_$ B) $\frac{2}{7} / \frac{4}{3} = \_ * \_$

2. Multiply across the fractions.

A) $\_ * \_ = \_$
1 * 7 = ___
5 * 4 = ___

B) $\_ * \_ = \_$
2 * 3 = ___
7 * 4 = ___

3. Simplify if possible.

A) $\_ = \_$ **or** No simplification B) $\_ = \_$ **or** No simplification

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Practice Problems:

A) $\frac{1}{3} / \frac{7}{2} = ?$

B) $\frac{3}{6} / \frac{1}{4} = ?$

C) $\frac{1}{4} / \frac{1}{10} = ?$