

Objectives: The students will be able to solve problems by multiplying and dividing fractions.

## Multiplying and Dividing Rational Numbers (specifically fractions)

When multiplying fractions, you **MUST** change mixed numbers to improper fractions. You do **NOT** get a common denominator. Cross cancel if at all possible. Some of the fractions include negative numbers. Follow your integer rules.

Simplify. All answers should be in simplest form.

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

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

$$3) 2\frac{2}{9} * 1\frac{3}{4} = \frac{20}{9} * \frac{7}{4} = \frac{35}{9}$$

$$4) 1\frac{3}{25} * -7\frac{1}{2} = \frac{28}{25} * -\frac{15}{2} = -\frac{42}{5}$$



When dividing fractions, you **MUST** change mixed numbers to improper fractions first. Then change to multiplying by the reciprocal. **ONLY** then can you cross cancel.

Simplify. All answers should be in simplest form.

$$1) \frac{6}{7} \div \frac{2}{3} =$$

$$\frac{6}{7} * \frac{3}{2} = \frac{9}{7}$$

$$2) -\frac{5}{9} \div \frac{10}{3} =$$

$$-\frac{5}{9} * \frac{3}{10} = -\frac{1}{6}$$

$$3) 2\frac{5}{8} \div \frac{-3}{4} =$$

$$2\frac{5}{8} * -\frac{4}{3} = -\frac{7}{2}$$

$$4) -3\frac{3}{5} \div -2\frac{7}{10} =$$

$$-\frac{18}{5} \div -\frac{27}{10} = \frac{18}{5} * \frac{10}{27} = \frac{4}{3}$$

### Distributive Property with Fractions

$$1. \frac{1}{3}(6x + 9) = 2x + 3$$

$$2. \frac{1}{4}(8x - 12) = 2x - 3$$

$$3. -\frac{1}{5}(5x + 10) = -x - 2$$

$$4. \frac{2}{3}(6x + 9) = 4x + 6$$

No Calculator!