FRACTION OPERATIONS

Fraction operations are the processes of adding, subtracting, multiplying and dividing fractions and mixed numbers. A mixed number is a fraction with a whole number.

Adding fractions is common in many everyday events, such as making a recipe and measuring wood. In order to add and **subtract fractions**, the fractions must have the same denominator. If the fractions do not have the same denominator, a common denominator must be found before the fractions can be added or subtracted. Once the fractions have the same denominator the fractions are added, by adding the numerators only and leaving the denominators the same.

Multiplying fractions is the operation of multiplying two or more fractions together to find a product. Multiplying fractions is used when finding the area of various shapes. **Dividing fractions** is the operation of dividing two fractions or mixed numbers to find a quotient.

Mixed nu number must be ch rming the operation.

Equations nverse operations

How to use fraction operations

When **adding or subtracting fractions**, the denominators must be the same. If the fractions have the same denominator, they can be added or subtracted. If the fractions do not have the same denominator, one must be found before the fractions can be added or subtracted.

Ex. Add 4/18 + 3/9 → 4/18 + 6/18 = 10/18 = 5/9

When **multiplying fractions**, simply multiply the numerators first to find the resulting numerator and then the denominators to find the resulting denominator. When multiplying fractions, the resulting fraction should always be reduced to lowest terms if possible.

When **dividing fractions**, the first fraction stays the same, the sign changes to multiplication and the second fraction is changed to its reciprocal. A reciprocal is the fraction flipped so when the two fractions are multiplied together, the result is 1.

Ex. **Multiply**: $5/6 \cdot 4/5 = 20/30 = 2/3$

Divide: $1/3 \div 4/7 = 1/3 \cdot 7/4 = 7/12$

When **evaluating mixed fractions**, the mixed fraction must be changed into an improper fraction before evaluating. The same rules apply to mixed fractions. When operating with mixed fractions, the result may be an improper fraction, which would then have to be changed b

Ex. **Add:** 33/24 = 5 13/24

Try This!

1. **Add** the fractions: 3/5 + 7/15 = ? 8/14 + 3/28 = ?

   2 2/3 + 6 1/5 = ? 4 7/8 + 1 3/4 = ?

2. **Subtract** the fractions: 8/9 - 2/3 = ? 15/16 - 4/8 = ?

   5 9/10 - 3 2/5 = ? 4 4/8 - 1 1/4 = ?

3. **Multiply** the fractions: 6/10 · 2/3 = ? 7/9 · 4/5 = ?

4. **Divide** ?

   5 1/2 ÷ 1 1/2 = ? 6 2/3 · 4 1/4 = ?

5. **Solve** the equations for x:

   x + 3/4 = 11/12

   x - 2 3/20 = 2 4/5

   1 7/9 · x = 4/18

   2 5/6 ÷ x = 1 5/12