

Math Rules

Adding Fractions: You can only add fractions with common denominators.

Example: $\frac{1}{5} + \frac{2}{5} = \frac{3}{5}$ (the denominator will always stay the same)

Adding Fractions: If the denominators are not the same, you must find the common denominator by finding the **least common multiple (LCM)**.

Example: $\frac{3}{7} + \frac{1}{14} =$ (the common denominator is 14 so in this case $\frac{3}{7}$ must be multiplied by $\frac{2}{2}$ to have a common denominator) $\frac{6}{14} + \frac{1}{14} = \frac{7}{14}$

Then, reduce the fraction: $\frac{7}{14} = \frac{1}{2}$

Subtracting Fractions: You can only subtract fractions with common denominators.

Example: $\frac{8}{9} - \frac{4}{9} = \frac{4}{9}$ (the denominator will always stay the same)

Subtracting Fractions: If the denominators are not the same, you must find the common denominator by finding the **least common multiple (LCM)**.

Example: $\frac{2}{3} - \frac{1}{4} =$ (the least common multiple is 12 so that will be the common denominator in this case. You will have to multiply $\frac{2}{3} \times \frac{4}{4}$ **and** $\frac{1}{4} \times \frac{3}{3}$)

The equation is now: $\frac{8}{12} - \frac{3}{12} = \frac{5}{12}$

Multiplying Fractions: You can multiply both the numerators and denominators, whether they are common or not.

Example: $\frac{3}{5} \times \frac{1}{4} = \frac{3}{20}$

Multiplying Fractions: If you can, you **must reduce**.

Example: $\frac{3}{10} \times \frac{4}{5} = \frac{12}{50} = \frac{6}{25}$

Multiplying Fractions: Always remember to **cross multiply**, if it is possible **and then reduce**.

Example: $\frac{5}{7} \times \frac{28}{30} = \frac{5}{7} \times \frac{\cancel{28}}{\cancel{30}} = \frac{1}{1} \times \frac{4}{6} = \frac{2}{3}$

Dividing with fractions: 1st Step—When dividing fractions, **always flip the second fraction and then multiply.**

Example: $\frac{4}{6} \div \frac{2}{3} = \frac{4}{6} \times \frac{3}{2}$

2nd Step—Cross Multiply (see if there are common multiples).

Example: $\frac{4}{6} \times \frac{3}{2} =$

3rd Step—Then Multiply.

Example: $\frac{2}{2} \times \frac{1}{1} = \frac{2}{2}$ **or** 1