

FRACTIONS

Adding + Subtracting

The denominator must be the same!

$$\frac{2}{4} + \frac{2}{4} = \frac{4}{4} = 1$$

When the Ds are the same
Keep the (D) the same
Add the (N).

$$\frac{3}{6} + \frac{4}{24} =$$

$$\begin{array}{l} \downarrow \\ \times 4 \left(\frac{12}{24} + \frac{4}{24} = \frac{16}{24} \right) \end{array}$$

It's the same for Subtracting!

$$\frac{4}{9} - \frac{1}{9} = \frac{3}{9}$$

$$\frac{4}{6} + \frac{3}{5} =$$

$$\begin{array}{l} \times 5 \left(\frac{20}{30} + \frac{18}{30} \right) \times 6 \\ = \frac{38}{30} = 1 \frac{8}{30} \end{array}$$

$$\frac{8}{10} - \frac{2}{5} =$$

$$\begin{array}{l} \downarrow \\ \frac{8}{10} - \frac{4}{10} = \frac{4}{10} \end{array}$$

EQUIVALENT FRACTIONS

Whatever you do to the top, you have to do to the bottom.

$$\begin{array}{l} \times 6 \left(\frac{3}{4} - \frac{2}{6} \right) \times 4 \\ = \frac{18}{24} - \frac{8}{24} = \frac{10}{24} \end{array}$$

Simplify - make the denominator as small as possible!

MULTIPLYING + DIVIDING.

X

fraction by an integer

$$\frac{3}{4} \times 2 = \frac{6}{4} = 1\frac{2}{4}$$

$$\frac{10}{12} \times 4 = \frac{40}{12} = 3\frac{4}{12}$$

Keep the $\textcircled{D}$ the same
times the $\textcircled{N}$

fraction by a fraction

$$\frac{4}{6} \times \frac{3}{7} = \frac{12}{42}$$

$$\frac{6}{12} \times \frac{2}{3} = \frac{12}{36}$$

times the top + times
the bottom.

÷ fraction by an integer

$$\frac{4}{6} \div 4 = \frac{1}{6}$$

(the numerator can be
divided by the integer
so keep the $\textcircled{D}$ the same
and divide the $\textcircled{N}$)

$$\frac{4}{6} \div 5 = \frac{4}{30}$$

(the $\textcircled{N}$ cannot be divided
by the $\textcircled{D}$, so keep the
 $\textcircled{N}$ the same and
MULTIPLY the $\textcircled{D} + \textcircled{D}$)

fraction by a fraction

$$\frac{2}{5} \div \frac{3}{10}$$

$$\downarrow$$
$$\frac{2}{5} \times \frac{10}{3} = \frac{20}{15} = 1\frac{5}{15}$$

Keep the first fraction
the same.
Flip the second
+ multiply.