

Fractions

* #'s that are rational.

Num. - Represent division.

Den.

- Numerator is the # on top

- Denominator is the # on bottom

* Fractions can be Added, Subtracted
Mult. & divided.

Multiplying fractions -

* multiply #'s in the numerator

§ multiply #'s in the denominator

by each other.

Ex. $\frac{5}{3} \cdot \frac{1}{8} = \frac{5 \cdot 1}{3 \cdot 8} = \frac{5}{24}$ $\left(\frac{1}{2}\right)\left(\frac{3}{4}\right) = \frac{1}{2} \cdot \frac{3}{4}$

$\left(\frac{1}{3}\right)\left(\frac{7}{3}\right) = \frac{7 \cdot 1}{3 \cdot 3} = \frac{7}{9}$

Dividing fractions

* Simplify by hand
or put in the calculator.

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

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

* Reciprocal- opposite of
a fraction

Ex

$$\frac{1}{2} \text{ rec.} \rightarrow \frac{-2}{1}$$

$$\frac{4}{3} \rightarrow \frac{-3}{4}$$

Adding & Subtracting fractions

* Important - when adding & subtr. you have to get common denominators.

How to get common denominators?

Ex $\frac{1}{3} + \frac{5}{6} =$

→ $\frac{1}{3} \cdot \frac{2}{2} = \frac{2}{6}$

Scale factor.

$\frac{2}{6} + \frac{5}{6} = \frac{7}{6}$

Scale factors are always 1.

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

* Once you have common denominators, you add only what's on top.

$\frac{2}{6} + \frac{5}{6} = \frac{7}{6}$

Adding + Subt. cont.

Ex $\frac{2}{7} + \frac{1}{4}$

Least common multiple

Smallest # that two numbers are both a factor of.

Ex 7 & 4

$7 \cdot 4 = 28$

$\rightarrow \frac{2}{7} \cdot \frac{4}{4} = \frac{8}{28}$

$\rightarrow \frac{1}{4} \cdot \frac{7}{7} = \frac{7}{28}$

$\frac{2}{7} + \frac{1}{4}$

$\frac{8}{28} + \frac{7}{28} = \frac{15}{28}$

Ex

$$\frac{3}{4} - \frac{1}{2}$$

Need both den. to equal 4

$$\begin{aligned} \rightarrow \frac{1}{2} \cdot \frac{2}{2} &= \frac{2}{4} \\ \rightarrow \frac{1}{2} \cdot \frac{2}{2} &= \frac{2}{4} \end{aligned}$$

$$\frac{3}{4} - \frac{2}{4} = \frac{1}{4}$$

Double Sign change

$$* \quad -10 - 4$$

$$-10 + 4 = \textcircled{-14}$$

* Only change on subtraction Problems

$$-3 - -4$$

$$-3 + 4 = 1$$

