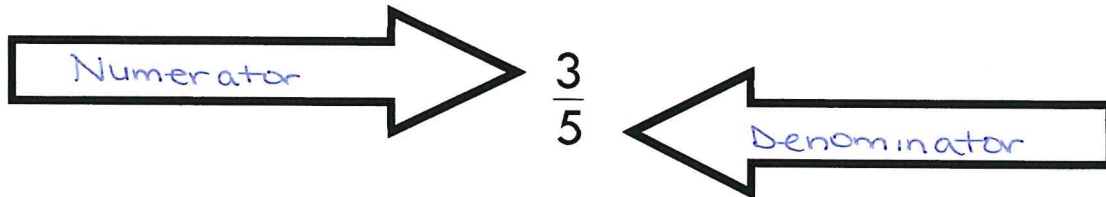


# FRACTIONS

Things to remember...

**Numerator and Denominator:** which is which??



BUT.....  $\frac{13}{5}$  is special: this type of fraction is called an improper fraction.

Why? The numerator is bigger than the denominator

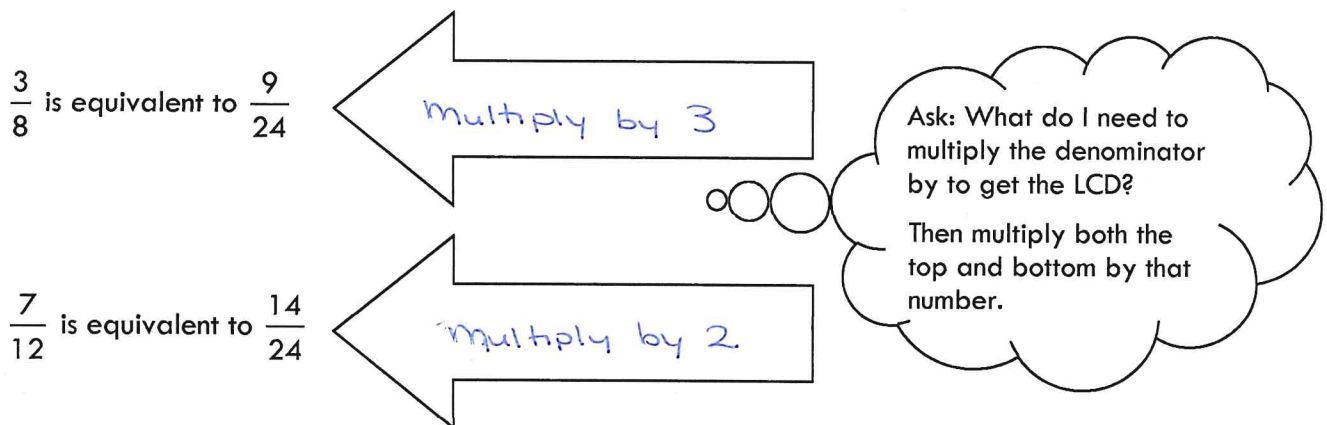
## LEAST COMMON DENOMINATOR (LCD)

The Least Common Denominator (Lowest Common Denominator) means...

multiple fractions have the same # in the denominator

Examples: for  $\frac{3}{8}$  and  $\frac{7}{12}$  the Least Common Denominator is 24. Why?

Multiples of 8 include 8, 16, 24, 32      Multiples of 12 include 12, 24, 36



What is the LCD for this group:  $\frac{1}{2}, \frac{3}{4}, \frac{5}{6}$  \*What are the equivalent fractions for each?

Multiples of 2 are 2, 4, 6, 8, 10, 12  
 Multiples of 4 are 4, 8, 12, 16  
 Multiples of 6 are 6, 12

12 is the least common

Equivalent fractions are:  $\frac{1}{2} \overset{\times 6}{=} \frac{6}{12}$ ,  $\frac{3}{4} \overset{\times 3}{=} \frac{9}{12}$ ,  $\frac{5}{6} \overset{\times 2}{=} \frac{10}{12}$

**LOWEST TERMS: fractions are always put into lowest terms**

When we put a fraction in Lowest Terms, we...

Divide the numerator & denominator by the highest common factor

Example:

$\frac{18}{20}$  is reduced to  $\frac{9}{10}$

Divide by 2

Factors of 18 = 1, 2, 9, 18

Factors of 20 = 1, 2, 4, 5, 10, 20

Factors are #'s that multiply together to give you a specific #

**CONVERSIONS: Change a fraction to a decimal.**

$\frac{3}{5} = 0.6$

$\frac{5}{6} = 0.83$

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

$\frac{14}{8} = 1.75$

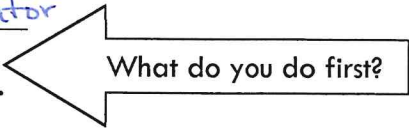
What did you do? Divide

The fraction line means " Divide "

# Fractions: Adding, Subtracting, Multiplying and Dividing

**Adding & Subtracting** → you must have: Common denominator

Then + or – the numerator but the denominator stays the same.



Examples:  $\frac{1}{5} + \frac{3}{5}$

$= \frac{4}{5}$

$\frac{2}{3} + \frac{4}{9} = \frac{6}{9} + \frac{4}{9}$

$= \frac{10}{9}$  ← keep the same

$\frac{5}{8} - \frac{3}{5}$

$= \frac{25}{40} - \frac{24}{40}$

$= \frac{1}{40}$  ← keep the same

$\frac{5}{12} + \frac{1}{6} - \frac{1}{4}$

$= \frac{5}{12} + \frac{2}{12} - \frac{3}{12}$

$= \frac{4}{12}$  ÷4 make sure this is in lowest terms

$= \frac{1}{3}$

**Multiplying:** Multiply numerators, then multiply denominators

Examples:

$\frac{1}{2} \times \frac{4}{9}$

$= \frac{4}{18}$  ÷2 ← put into lowest terms

$= \frac{2}{9}$

$\frac{2}{3} \times \frac{4}{5} \times \frac{3}{2}$

$= \frac{24}{30}$  ÷6 lowest terms

$= \frac{4}{5}$

**Dividing:** There's a trick- Keep 1<sup>st</sup> fraction, switch division to multiplication, flip second fraction

Examples:

$\frac{2}{3} \div \frac{5}{7}$

$= \frac{2}{3} \times \frac{7}{5}$

$= \frac{14}{15}$

$\frac{3}{9} \div \frac{4}{10}$

$= \frac{3}{9} \times \frac{10}{4}$

$= \frac{30}{36}$  ÷6 put into lowest terms

$= \frac{5}{6}$