

how low can you go?

When adding or subtracting fractions with unlike denominators, the first step is to rename one or both fractions so they have the same (or like) denominators.

There are many denominators you **COULD** use, but it is easiest to use the **lowest common denominator**, called the LCD. This is the smallest possible denominator that both fractions can be renamed to have.

The lowest common denominator is the **least common multiple** (or **lowest common multiple**), called the LCM, of the two denominators.

Start with the larger denominator.
Ask: *Is THIS number a multiple of the other denominator?* If so, use **that** number and rename the other fraction.

$$\frac{2}{3} + \frac{1}{9} =$$

9 is a multiple of 3. I can rename two-thirds to a certain number of ninths.

$$\frac{2}{3} \times \frac{3}{3} = \frac{6}{9} \longrightarrow \frac{6}{9} + \frac{1}{9} = \frac{7}{9}$$

WHAT IF THE LARGER DENOMINATOR ISN'T A MULTIPLE OF THE SMALLER ONE?

List the multiples of the larger denominator. Keep listing until you find a multiple that is **ALSO** a multiple of the other denominator. Use **that** number and rename the other fraction.

$$\frac{7}{12} - \frac{4}{9} = ?$$

multiples of 12: 12, 24, 36...
no no yes!

$$\frac{7}{12} \times \frac{3}{3} = \frac{21}{36}$$

and

$$\frac{4}{9} \times \frac{4}{4} = \frac{16}{36}$$

$$\longrightarrow \frac{21}{36} - \frac{16}{36} = \frac{5}{36}$$