

Adding + Subtracting Fractions with Unlike Denominators

$$\frac{1}{2} + \frac{1}{8}$$

Halves and eighths can't be added because they don't share the same denominator.

I can find the common denominator by finding the Least Common Multiple (LCM) of each denominator.

Multiples of 2: 2 4 6 8 10 12 14 16

Multiples of 8: 8 16 24 32 40

The Least Common Multiple is 8.

We need to find equivalent fractions for both $\frac{1}{2}$ and $\frac{1}{8}$ with 8 as the new denominator.

$$\begin{array}{r} \frac{1}{2} \\ + \frac{1}{8} \\ \hline \end{array} \begin{array}{l} \times 4 \\ \times 4 \\ \longrightarrow \\ \times 1 \\ \times 1 \end{array} \begin{array}{c} \boxed{\frac{4}{8}} \\ \boxed{\frac{1}{8}} \\ \downarrow \end{array} \begin{array}{l} (\frac{4}{8} \text{ is an equivalent fraction for } \frac{1}{2}.) \\ (\text{stays the same because it's already in eighths.}) \end{array}$$

$$\frac{4}{8} + \frac{1}{8} = \frac{5}{8} \rightarrow \frac{5}{8} \text{ is already simplified.}$$

* For subtracting fractions, you follow the same steps, but just subtract instead of add. ☺