

The Butterfly Method for adding and subtracting fractions with different dominators

The diagram illustrates the Butterfly Method for adding and subtracting fractions with different denominators. It shows three rows of calculations, each starting with a fraction problem and followed by three steps of the butterfly method.

Row 1: Addition

Start: $\frac{3}{4} + \frac{2}{5}$

Step 1: Cross-multiplication. The numerators are crossed to find the new numerator: $3 \times 5 = 15$ and $2 \times 4 = 8$. The denominators are crossed to find the new denominator: $4 \times 5 = 20$.

Step 2: The result is $\frac{15}{20} + \frac{8}{20} = \frac{23}{20}$.

Step 3: The final result is $1 \frac{3}{20}$.

Row 2: Subtraction

Start: $\frac{3}{4} - \frac{2}{5}$

Step 1: Cross-multiplication. The numerators are crossed to find the new numerator: $3 \times 5 = 15$ and $2 \times 4 = 8$. The denominators are crossed to find the new denominator: $4 \times 5 = 20$.

Step 2: The result is $\frac{15}{20} - \frac{8}{20} = \frac{7}{20}$.

Step 3: The final result is $\frac{7}{20}$.