

Adding fractions with different denominators.

General Form:

$$\frac{a}{b} + \frac{c}{d} = \frac{ad + bc}{bd}$$

Example:

$$\frac{1}{2} + \frac{4}{3} = \frac{1 \times 3 + 2 \times 4}{2 \times 3} = \frac{3 + 8}{6} = \frac{11}{6}$$

Example:

$$\frac{11}{9} + \frac{7}{4} = \frac{11 \times 4 + 9 \times 7}{9 \times 4} = \frac{44 + 63}{36} = \frac{107}{36}$$

Adding Mixed Fractions.

General Form:

$$a\frac{b}{c} + d\frac{e}{f} = \frac{a \times c + b}{c} + \frac{d \times f + e}{f} = \frac{(a \times c + b) \times f + c \times (d \times f + e)}{c \times f}$$

Example:

$$5\frac{3}{4} + 2\frac{1}{3} = \frac{5 \times 4 + 3}{4} + \frac{2 \times 3 + 1}{3} = \frac{23}{4} + \frac{7}{3} = \frac{23 \times 3 + 4 \times 7}{4 \times 3} = \frac{69 + 28}{12} = \frac{97}{12}$$

Example:

$$1\frac{2}{3} + 4\frac{5}{6} = \frac{1 \times 3 + 2}{3} + \frac{4 \times 6 + 5}{6} = \frac{5}{3} + \frac{29}{6} = \frac{5 \times 6 + 3 \times 29}{3 \times 6} = \frac{30 + 87}{18} = \frac{117}{18}$$