

# Adding and Subtracting Fractions with Different Denominators

$$\frac{2}{3} + \frac{5}{6} + \frac{3}{4} = \frac{27}{12}$$

Diagram illustrating the conversion of fractions to a common denominator of 12:

- $\frac{2}{3} \times \frac{4}{4} = \frac{8}{12}$
- $\frac{5}{6} \times \frac{2}{2} = \frac{10}{12}$
- $\frac{3}{4} \times \frac{3}{3} = \frac{9}{12}$

Below each fraction is a bar model with 12 equal parts, where the numerator parts are shaded green.

Convert the fractions so that they have the same denominator by finding a common multiple of the denominators. Then, add or subtract the numerators.

1)

$$\frac{3}{5} + \frac{5}{6} + \frac{1}{3} = \frac{\boxed{\phantom{00}}}{30}$$

Diagram illustrating the conversion of fractions to a common denominator of 30:

- $\frac{3}{5} \times \frac{6}{6} = \frac{18}{30}$
- $\frac{5}{6} \times \frac{5}{5} = \frac{25}{30}$
- $\frac{1}{3} \times \frac{10}{10} = \frac{10}{30}$

Below each fraction is a bar model with 30 equal parts, where the numerator parts are shaded green.

2)  $\frac{5}{6} - \frac{1}{9}$

$$\frac{\boxed{\phantom{00}}}{18} - \frac{\boxed{\phantom{00}}}{18} = \frac{\boxed{\phantom{00}}}{18}$$

3)  $\frac{7}{8} + \frac{11}{12} + \frac{2}{4}$

$$\frac{\boxed{\phantom{00}}}{24} + \frac{\boxed{\phantom{00}}}{24} + \frac{\boxed{\phantom{00}}}{24} = \frac{\boxed{\phantom{00}}}{24}$$

4)  $\frac{4}{8} - \frac{1}{7}$

$$\frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}} - \frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}} = \frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}}$$

5)  $\frac{4}{9} + \frac{1}{6} + \frac{3}{4}$

$$\frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}} + \frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}} + \frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}} = \frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}}$$

