

Adding and subtracting fractions

Before we can add fractions together or subtract a fraction from another fraction, we need to identify what kinds of fractions we’re dealing with. The fractions will either have a common denominator or different denominators.

Common denominator

The denominators of the fractions are equal. We can add or subtract without changing the fractions.

When we want to add or subtract fractions that already have the same denominator, we just add or subtract the numerators, and keep the same denominator.

$$\frac{5}{7} + \frac{3}{7} = \frac{5 + 3}{7} = \frac{8}{7}$$

$$\frac{5}{7} - \frac{3}{7} = \frac{5 - 3}{7} = \frac{2}{7}$$

Different denominators

When the denominators are unequal, we have to find a common denominator before we can add or subtract the fractions.

To find a common denominator, we need to find the least common multiple (LCM) of the denominators.

Problem	With a common denominator	Solution
$\frac{3}{5} + \frac{1}{3}$	$\frac{3}{5} \left(\frac{3}{3}\right) + \frac{1}{3} \left(\frac{5}{5}\right) = \frac{9}{15} + \frac{5}{15}$	$\frac{14}{15}$
$\frac{3}{5} - \frac{1}{3}$	$\frac{3}{5} \left(\frac{3}{3}\right) - \frac{1}{3} \left(\frac{5}{5}\right) = \frac{9}{15} - \frac{5}{15}$	$\frac{4}{15}$