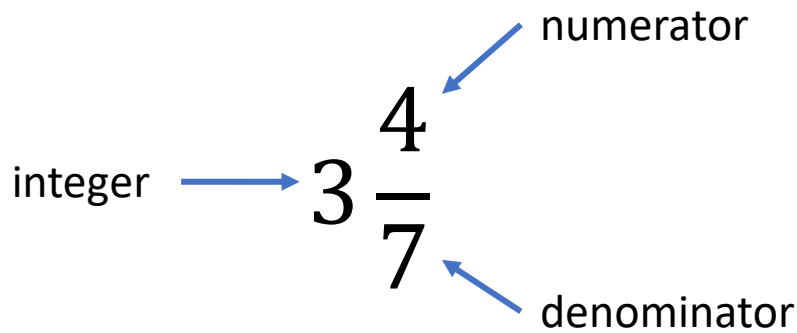


Fractions – How to: step by step

Parts of a fraction:



Key vocabulary:

- Numerator – number of equal parts used by the fraction
- Denominator – number of equal parts the fraction has been split into
- Integer – whole number
- Equivalent fraction – a fraction worth the same amount e.g $\frac{2}{4} = \frac{1}{2}$
- Mixed number – has a whole number and a fraction $1\frac{5}{6}$
- Improper fraction – what used to be known as a top-heavy fraction, where the numerator is greater than the denominator $\frac{11}{6}$

Adding fractions with the same denominator – How to: step by step

$$\frac{4}{7} + \frac{2}{7} =$$

1. Add the fractions together

$$\frac{4}{7} + \frac{2}{7} = \frac{2}{7}$$

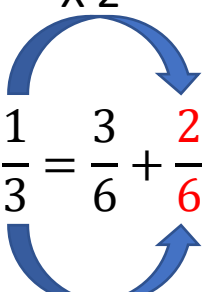
You only add the numerators (top numbers)

TOP TIP: the denominator (the bottom number) ALWAYS stay the same

Adding fractions with different denominators – How to: step by step

$$\frac{3}{6} + \frac{1}{3} =$$

1. Start by making both the denominators (bottom number) the same

$$\frac{3}{6} + \frac{1}{3} = \frac{3}{6} + \frac{2}{6} =$$


TOP TIP: the whole numbers ALWAYS stay the same

Can I multiply my smaller denominator by a number to make it the same as the bigger denominator?

Whatever I do to the denominator, I also do to the numerator.

2. Add the fractions together

$$\frac{3}{6} + \frac{2}{6} = \frac{5}{6}$$

You only add the numerators (top numbers) together

TOP TIP: the denominator (the bottom number) ALWAYS stays the same

Subtracting fractions with the same denominator – How to: step by step

$$\frac{4}{7} - \frac{2}{7} =$$

1. Subtract the fractions

$$\frac{4}{7} - \frac{2}{7} = \frac{2}{7}$$

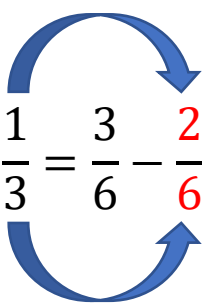
You only subtract the numerators (top numbers)

TOP TIP: the denominator (the bottom number) ALWAYS stay the same

Subtracting fractions with different denominators – How to: step by step

$$\frac{3}{6} - \frac{1}{3} =$$

1. Start by making both the denominators (bottom number) the same

$$\frac{3}{6} - \frac{1}{3} = \frac{3}{6} - \frac{2}{6} =$$


TOP TIP: the whole numbers ALWAYS stay the same

Can I multiply my smaller denominator by a number to make it the same as the bigger denominator?

Whatever I do to the denominator, I also do to the numerator.

2. Subtract the fractions

$$\frac{3}{6} - \frac{2}{6} = \frac{1}{6}$$

You only subtract the numerators (top numbers) together

TOP TIP: the denominator (the bottom number) ALWAYS stays the same

Multiplying a fraction by a whole number – How to: step by step

$$\frac{2}{5} \times 4 =$$

1. Multiply the numerator (top number) by the whole number (2x4)

$$\frac{2}{5} \times 4 = \frac{8}{5}$$

TOP TIP: the denominator stays the same

Multiplying a mixed number by a whole number – How to: step by step

$$3\frac{2}{5} \times 4 =$$

1. Multiply the numerator (top number) by the whole number (2x4) and multiply the integer (whole number) by the whole number (3 X 4)

Put the two parts together to get your answer

$$3 \times 4 = 12$$

$$\frac{2}{5} \times 4 = \frac{8}{5}$$

$$3\frac{2}{5} \times 4 = 12\frac{8}{5}$$

TOP TIP: the denominator stays the same

Multiplying a fraction by a fraction – How to: step by step

$$\frac{2}{5} \times \frac{4}{7} =$$

1. Multiply the numerator (top number) by the other numerator (2x4) and multiply the denominator by the other denominator.

$$\frac{2 \times 4}{5 \times 7} = \frac{8}{35}$$

Dividing a fraction by a whole number – How to: step by step

$$\frac{6}{8} \div 3 =$$

Ask yourself, can I divide the numerator (top number) by the whole number?


If **yes**: divide the numerator by the whole number and keep the denominator the same.

$$\frac{6}{8} \div 3 = \frac{2}{8}$$

$$\frac{5}{8} \div 3 =$$

Ask yourself, can I divide the numerator (top number) by the whole number?

If **no**: keep the numerator the same and multiply the denominator by the whole number. (8 x 3)

$$\frac{5}{8} \div 3 = \frac{5}{24}$$


X 3

Converting between an improper fraction and a mixed number –

How to: step by step

$$\frac{8}{6} =$$

Ask yourself, how many lots of the denominator fit into the numerator? (Divide the numerator by the denominator)

$$\frac{8}{6} = 1 \frac{2}{6}$$

1 lot of 6 fits into 8 so my integer (whole number) becomes 1.

How many are remaining? That is your new numerator. $8 - 6 = 2$

Converting between an a mixed number and an improper fraction – How to: step by step

$$2\frac{4}{6} =$$

1. Multiply the denominator (bottom number) by the integer (whole number)

$$2 \times 6 = 12$$

2. Add the numerator (top number) to that number

$$12 + 4 = 16$$

3. Write your new numerator and keep the denominator the same.

$$2\frac{4}{6} = \frac{16}{6}$$

Finding equivalent fractions – How to: step by step

$$\frac{5}{10} =$$

Ask yourself, can I divide the numerator and the denominator by the same number? (Do they share any factors?)

$$\begin{array}{ccc} & \div 2 & \\ \text{↩} & & \text{↪} \\ \frac{6}{8} = \frac{3}{4} & & \\ \text{↪} & & \text{↩} \\ & \div 2 & \end{array}$$

$$\begin{array}{ccc} & \div 5 & \\ \text{↩} & & \text{↪} \\ \frac{5}{10} = \frac{1}{2} & & \\ \text{↪} & & \text{↩} \\ & \div 5 & \end{array}$$

$$\begin{array}{ccc} & \div 9 & \\ \text{↩} & & \text{↪} \\ \frac{27}{63} = \frac{3}{7} & & \\ \text{↪} & & \text{↩} \\ & \div 9 & \end{array}$$

$$\begin{array}{ccc} & \div 8 & \\ \text{↩} & & \text{↪} \\ \frac{24}{64} = \frac{3}{8} & & \\ \text{↪} & & \text{↩} \\ & \div 8 & \end{array}$$