



Common unit fractions as percentages

What is a unit fraction?

Have a look at these fractions: $\frac{1}{2}$ $\frac{1}{4}$ $\frac{1}{10}$ $\frac{1}{5}$

They all have 1 in the **numerator** (the **top** number of the fraction). They all refer to one part when a whole is divided into a different number of equal parts (as shown in the **denominator**, the **bottom** number of the fraction). So $\frac{1}{5}$ means that the whole is divided into 5 equal parts and we are referring to 1 of those parts.

Why express fractions as percentages?

Percentages are **fractions** that always have 100 as the denominator. This makes it possible to **compare** the value of each part when different-sized wholes are divided into parts.

Examples

Most of us are familiar with parts of a 100 because we use pounds and pence in our everyday lives. And multiplying and dividing by 10 or a 100 can be done easily.

$$1 \text{ p} = \frac{1}{100} \text{ th of } \text{£}1 \qquad 10 \text{ p} = \frac{10}{100} \text{ th of } \text{£}1$$

Similarly, using metric measure we can easily work out that:

$$1 \text{ cm} = \frac{1}{100} \text{ th of } 1 \text{ m} \qquad 10 \text{ cl} = \frac{10}{100} \text{ th of a litre} \qquad 10 \text{ gm} = 10/1000\text{th of a kg}$$

Fractions to percentages

To convert a unit fraction to a percentage figure, multiply 1 (the numerator) by 100 and divide by the bottom number (denominator):

$$\begin{aligned} \text{So } \frac{1}{4} \text{ as a percentage is } \frac{1}{4} \times 100 &= \frac{100}{4} = 25 \text{ (4 } \times \text{ 25 is 100)} \\ \frac{1}{2} \text{ as a percentage is } \frac{1}{2} \times 100 &= \frac{100}{2} = 50 \\ \frac{1}{10} \text{ as a percentage is } \frac{1}{10} \times 100 &= \frac{100}{10} = 10 \end{aligned}$$