

FRACTIONS

Meanings

Common Fractions: $\frac{3}{5}$ means 3 of 5 equal parts and it means $3 \div 5$.

Decimal Fractions: 0.27 means 2 tenths and 7 hundredths. It also means 27 hundredths.

Percentages: 32% means 32 hundredths, i.e. $\frac{32}{100}$.

Conversions

To **convert** a common fraction like $\frac{3}{5}$ to a decimal fraction, just think of it as $3 \div 5$ and divide $3 \div 5 = 0.6$.

To **convert** a decimal fraction like 0.342 to a common fraction just read the number as 342 thousandths, i.e. $\frac{342}{1000}$.

To **convert** a percentage like 46% to a decimal fraction, treat it as $\frac{46}{100}$, in other words divide by 100: $46 \div 100 = 0.46$.

To **convert** a decimal fraction to a percentage, do the reverse, i.e. multiply by 100, or take the first two decimal places as the percentage.

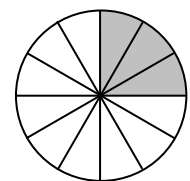
To **convert** a percentage like 46% to a common fraction, just call it $\frac{46}{100}$.

To **convert** a common fraction to a percentage, go via a decimal fraction.

To **convert** a **mixed number** like $2\frac{3}{5}$ to an **improper fraction**, draw (or imagine) the number made of fifths and count the fifths. To convert the other way, draw fifths in groups of 5 and count the wholes and left-over fifths.



We get **equivalent common fractions** by multiplying or dividing the top and bottom by the same number. Dividing top and bottom is called cancelling. A simplest common fraction is one that cannot be cancelled down any further. The picture shows why $\frac{1}{4} = \frac{3}{12}$.



Fractions of Numbers

To **find $\frac{3}{5}$ of a number**, divide it by 5 to get $\frac{1}{5}$, then multiply by 3 to get $\frac{3}{5}$. To get 34% of a number, divide by 100 to get 1%, then multiply by 34 to get 34%. To get 0.36 of a number, multiply it by 0.36. Alternatively, you can get $\frac{3}{5}$ of a number by converting $\frac{3}{5}$ to the decimal 0.6, then multiplying by the decimal. Likewise for percentages of numbers.

To **add** 20% to a number, you can work out 20% of the number and add it on, but it is quicker just to work out 120% of the number, i.e. multiply it by 1.2. Likewise for **subtracting** 20% from a number by, you can calculate 20% of it then subtract, or you can find 80% of it by multiplying by 0.8.