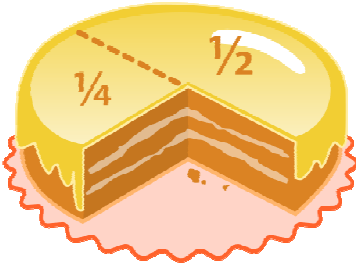


Decimals, Fractions and Percentages

Fractions, decimals and percentages are all different ways of writing the same thing.



A half can be written

As a fraction: $\frac{1}{2}$

As a decimal: 0.5

As a percentage: 50%

A quarter can be written

As a fraction: $\frac{1}{4}$

As a decimal: 0.25

As a percentage: 25%

Glossary of Terms:

Decimal

A number less than 1. A decimal is a number which is based on a ten digit numerical system, that is, it shows tenths, hundredths and thousandths. They have a decimal point.

Fraction

A part of a whole. When you divide something into equal pieces, each piece is a fraction of the whole thing.

Percent

A percentage is a way of expressing a number as a fraction of 100. The % sign is a short way of writing percent.

There are a number of common ones that are useful to learn. The table below shows the most common ones:

Fraction	Decimal	Percentage
1	1	100%
$\frac{1}{4}$	0.25	25%
$\frac{1}{2}$	0.5	50%
$\frac{3}{4}$	0.75	75%
$\frac{1}{10}$	0.1	10%
$\frac{1}{5}$	0.2	20%
$\frac{1}{3}$	0.33	33.33%
$\frac{2}{3}$	0.67	66.67%

Converting between Percentages and Decimals

To convert a **percentage to a decimal** divide the number by 100.

Example

Convert 54% to a decimal

Divide by 100 $54 / 100$

Answer $54\% = 0.54$

To convert a **decimal to a percentage** multiply the number by 100.

Example

Convert 0.54 to percentage

Multiply by 100 0.54×100

Answer $0.54 = 54\%$

Converting between Fractions and Decimals

To convert a **fraction to a decimal** divide the top number by the bottom number

Example

Convert $1/4$ to a decimal

Divide 1 by 4

Answer $1/4 = 25\%$

To convert a **decimal to a fraction** remember that decimals are based on tenths hundredths and thousandths.

Example

Convert 0.75 to a fraction

This is seven tenths and 5 hundredths which is the same as 75 hundredths or $75/100$.

Simplify the fraction $75/100 = 3/4$

Answer $0.75 = 3/4$

Converting between Fractions and Percentages

To convert a **fraction to a percentage** divide the top number by the bottom number and multiply the result by 100.

Example

Convert $1/3$ to a percentage

Divide 1 by 3 = 0.333

Multiply by 100 0.33×100

Answer $1/3 = 33.3\%$

To convert a **percentage to a fraction** put the number over 100 and simplify if possible.

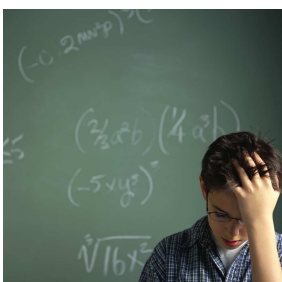
Example

Convert 40% to a fraction

Put number over 100 = $40/100$

Simplify $40/100 = 4/10 = 2/5$

Answer $40\% = 2/5$



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