

Number

Integers, decimals and symbols

Integers

Integers are whole numbers. They include positive and negative numbers and zero. 1, 129, 0, -2, -32 are all integers.

WORKIT!

Which **four** numbers in this list are integers?

$\frac{1}{4}$, 0, 0.125, $\frac{1}{3}$, -0.05, 120, π , $\sqrt{4}$, $\sqrt{2}$, 17

The four integers are 0, 120, $\sqrt{4}$, 17.

$\sqrt{4} = 2$ (or -2) and is therefore an integer.

Place value

The position of a digit in a number tells you its value.

For example, in the number 1346 the values of each digit are as follows:

| Place value | 1000 | 100 | 10 | 1 |
|-------------|------|-----|----|---|
| Number | 1 | 3 | 4 | 6 |

So the number 1 in 1346 represents 1000, 3 represents 300, 4 represents 40 and 6 represents 6.

The values of the digits after the decimal point are:

| Place value | tenth ($\frac{1}{10}$) | hundredth ($\frac{1}{100}$) | thousandth ($\frac{1}{1000}$) |
|-------------|--------------------------|-------------------------------|---------------------------------|
| Number | 2 | 1 | 5 |

The number 0.215 represents 2 tenths, 1 hundredth and 5 thousandths. The number 0.4 represents 4 tenths. 0.4 is bigger than 0.215 because it has more tenths.

Multiplying and dividing decimals by 10, 100 and 1000

To multiply any number by 10, move the digits one place to the left. To multiply by 100, move the digits two places to the left. To multiply by 1000, move the digits three places to the left.

| | 1000 | 100 | 10 | 1 | $\frac{1}{10}$ | $\frac{1}{100}$ | $\frac{1}{1000}$ |
|---------------------|------|-----|----|---|----------------|-----------------|------------------|
| 2.358 | | | | 2 | 3 | 5 | 8 |
| 2.358×10 | | | 2 | 3 | 5 | 8 | |
| 2.358×100 | | 2 | 3 | 5 | 8 | | |
| 2.358×1000 | 2 | 3 | 5 | 8 | | | |