

## Standard Index Form

*Standard index form* (otherwise known as *scientific notation*) is a useful shorthand for writing either very large or very small numbers. In standard index form a number is written firstly with a sign (if negative) followed by a number between 1 and 10 multiplied by a power<sup>1</sup> of 10.

### Powers of 10

#### Non-negative powers of 10

$10^0$	1
$10^1$	10
$10^2$	100
$10^3$	1000
$10^4$	10000
$10^5$	100000
$10^6$	1000000
$10^7$	10000000

#### Negative powers of 10

$10^{-1}$	0.1
$10^{-2}$	0.01
$10^{-3}$	0.001
$10^{-4}$	0.0001
$10^{-5}$	0.00001
$10^{-6}$	0.000001
$10^{-7}$	0.0000001
$10^{-8}$	0.00000001

Examples of writing numbers in standard index form:

$$200 = 2 \times 10^2,$$

$$0.02 = 2 \times 10^{-2},$$

$$-5000 = -5 \times 10^3.$$

### Big Numbers

In one of the examples above:

$$200.0 = 2.0 \times 10^2,$$

we see that the decimal point is moved two digits to the left and the power of 10 is 2.

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<sup>1</sup> [Powers and Roots](#)

