

# Standard form

## Facts

**Standard form**, or standard index form, is a system of writing numbers which can be particularly useful for dealing with very big or very small numbers.

Standard form is written in the form  $a \times 10^n$  where  $a$  is a number bigger than or equal to 1 but less than 10 and  $n$  is any positive or negative whole number

What is Standard Form? [www.cazoommaths.com](http://www.cazoommaths.com)

Always between 1 and 10  
(not including 10)

$1.9 \times 10^7 = 19000000$

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$28.3 \times 10^{13}$  → Not in standard form (sad face)

$0.283 \times 10^{15}$  → Not in standard form (sad face)

$2.83 \times 10^{14}$  → In standard form (happy face)

Always between 1 and 10  
(not including 10) = 283000000000000

## Convert to Standard Form

Move the decimal point until there is one digit to the left of the decimal point.

Exponent goes **up** ← Decimal point moves **left** • Decimal point moves **right** → Exponent goes **down**

Examples:

$$156000. = 1.56 \times 10^5$$

Move decimal point 5 places left,  
exponent goes up by 5

$$0.0000053 = 5.3 \times 10^{-6}$$

Move decimal point 6 places right,  
exponent goes down by 6