

Scientific Notation:

$$1 \times 10^3 = 1000.0 = 1.0 \text{ E}+03 = \text{One Thousand}$$

$$1 \times 10^2 = 100.0 = 1.0 \text{ E}+02 = \text{One Hundred}$$

$$1 \times 10^1 = 10.0 = 1.0 \text{ E}+01 = \text{Ten}$$

$$1 \times 10^0 = 1.0 = 1.0 \text{ E}+00 = \text{One}$$

$$1 \times 10^{-1} = 0.1 = 1.0 \text{ E}-01 = \text{One Tenth} = 1/10$$

$$1 \times 10^{-2} = 0.01 = 1.0 \text{ E}-02 = \text{One Hundredth} = 1/100$$

$$1 \times 10^{-3} = 0.001 = 1.0 \text{ E}-03 = \text{One Thousandth} = 1/1,000$$

$$1 \times 10^{-4} = 0.0001 = 1.0 \text{ E}-04 = \text{One Ten Thousandth} = 1/10,000$$

$$1 \times 10^{-5} = 0.00001 = 1.0 \text{ E}-05 = \text{One Hundred Thousandth} = 1/100,000$$

$$1 \times 10^{-6} = 0.000001 = 1.0 \text{ E}-06 = \text{One Millionth} = 1/1,000,000$$

$$1 \times 10^{-7} = 0.0000001 = 1.0 \text{ E}-07 = \text{One Ten Millionth} = 1/10,000,000$$

$$1 \times 10^{-8} = 0.00000001 = 1.0 \text{ E}-08 = \text{One Hundred Thousandth} = 1/100,000,000$$

$$1 \times 10^{-9} = 0.000000001 = 1.0 \text{ E}-09 = \text{One Billionth} = 1/1,000,000,000$$

In America, a billion is $1 \times 10^9 = 1,000,000,000$ (1,000 million) with a different meaning in Europe. In Europe, a billion is $1 \times 10^{12} = 1,000,000,000,000$ (1 million million). Billion is French for a million million.

In scientific notation, the exponent y in 10^y says move the decimal point y places. Move y places to the right if y is positive and y places to the left if y is negative. For example,

$$1234.5678 \times 10^3 = 1234567.8$$

$$1234.5678 \times 10^{-3} = 1.2345678$$

$$1234.5678 \times 10^{-6} = 0.0012345678$$

Also, if the number is $A.BC \times 10^{-y}$, then A is in the y -th decimal place to the right of zero. For example,

$$A.BC \times 10^{-3} = 0.00ABC$$

$$A.BC \times 10^{-5} = 0.0000ABC$$

$$8.76 \times 10^{-5} = 0.0000876.$$