

Scientific Notation

1 200 000 in scientific notation is 1.2×10^6

Power	As a Rational Number
$\times 10^{10}$	
$\times 10^9$	
$\times 10^8$	
$\times 10^7$	
$\times 10^6$	
$\times 10^5$	
$\times 10^4$	
$\times 10^3$	
$\times 10^2$	
$\times 10^1$	
$\times 10^0$	
$\times 10^{-1}$	
$\times 10^{-2}$	$\times 0.01$
$\times 10^{-3}$	
$\times 10^{-4}$	
$\times 10^{-5}$	
$\times 10^{-6}$	
$\times 10^{-7}$	
$\times 10^{-8}$	
$\times 10^{-9}$	
$\times 10^{-10}$	

Number	Scientific Notation
700	
4 300	
8 900	
32 000	
756 000	
907 000	
6 400 000	
45 600 000	
534 000 000	
2 730 000 000	
0.673	
0.042	
0.00091	
0.000037	
0.0000004	
0.000000652	
0.00000000908	
0.000000000845	

Represent these in Scientific Notation

345

0.060 30

7000

30 000 000 000

20 000

0.70

3 000 000

58

244 000 000

4

892 000 000

42 000

9 560 000 000

500

150 000 000 000

7 780 000

5808

0.000 03

0.000 063

12

5300

0.004 00

29 979 280 000

0.000 000 444

0.000 000 000 913

0.000 000 001

Write these in Scientific Notation.

If a satellite travels 62 000 000 miles from Earth.

In Australia, the people eat approximately 2 240 000 000 pounds of bread in a year.

Scientists discovered that the size of the Antarctic Ocean is 20 330 000 km².

The charge of a proton is 0.000 000 000 000 000 16 C.

The mass of earth is 5 980 000 000 000 000 000 000 kg

The width of the classroom is 6 m

A charge of 0. 000 000 000 000 000 000 16 C

96 740 m

500 000 000 Hz

227 000 000 000 km

0.000 000 008 s

1 990 000 000 000 000 000 000 kg

0.000 000 000 000 000 000 000 911 kg

Change back to non-exponential form:

$$6 \times 10^6$$

$$4.4 \times 10^4$$

$$1.23 \times 10^{-4}$$

$$7.256\ 41 \times 10^3$$

$$3.10 \times 10^{-5}$$

$$5.196 \times 10^4$$

$$8.4 \times 10^{-8}$$

$$6.67 \times 10^0$$

The volume of Lake Rason is approximately 2.56×10^5 km³.

The speed of light is approximately 3.0×10^8 m/s.

A computer can perform 4.66×10^8 calculations per second.

We know that there are 3.4×10^9 particles of dust per cubic meter.

The sun is 1.5×10^{11} meters from Earth.

Scientific notation makes it easier to identify significant digits and to perform calculations with very large or very small numbers.

Add or subtract: Round your answer to the same **place value** as the least precise measurement.

Multiply or divide: Round your answer to the same **number of significant digits** as the measurement with the fewest significant digits.

Add or subtract. Use the correct amount of significant digits.

$$8.8 \times 10^6 + 4.6 \times 10^6$$

$$3.3 \times 10^{-4} + 8.1 \times 10^{-5}$$

$$5.48 \times 10^{-2} - 2.11 \times 10^{-2}$$

$$6.23 \times 10^{-9} - 8.5 \times 10^{-10}$$

$$2.2 \times 10^4 + 3.3 \times 10^5$$

$$1.6 \times 10^{10} - 4.1 \times 10^9$$

Multiply and divide. Use the correct amount of significant digits.

$$(2 \times 10^7)(2 \times 10^4)$$

$$\frac{6.3 \times 10^{-2}}{3 \times 10^{-4}}$$

$$(2.5 \times 10^4)(8.0 \times 10^{-2})$$

$$\frac{(4 \times 10^6)}{(2 \times 10^3)}$$

$$(2.5 \times 10^8)(4.0 \times 10^{-3})$$

$$\frac{(7.2 \times 10^{-6})}{(1.2 \times 10^5)}$$

$$\frac{1.3 \times 10^2}{3 \times 10^1}$$

$$\frac{4 \times 10^6}{2 \times 10^3}$$

$$\frac{(6.0 \times 10^{-5})}{(1.5 \times 10^{-9})}$$