

# Scientific Notation

Scientific notation is used to express very large or very small numbers. The first number is the coefficient. It must always be greater or equal to 1 and less than 10. The second number is the base and is always to the power of 10 with an exponent.

*Tip 1: The number of times you move the decimal is the exponent.*

*Tip 2: If you move the decimal to the right, the exponent is negative. If you move it to the left, it is positive.*

Example 1	Example 2
<p>4,986</p> <p>4,986</p>	<p>0.00169</p> <p>0.00169</p>
<p>Scientific Notation</p> <p>coefficient    exponent <math>4.986 \times 10^3</math> power of 10</p>	<p>Scientific Notation</p> <p>coefficient    exponent <math>1.69 \times 10^{-3}</math> power of 10</p>

- 98,837
- 05022
- 0.0883
- 0.000019
- 16,000,000
- 77
- 2130
- 5507
- 0.0074300
- 0220.0110
- $5.3 \times 10^{-3}$
- $2.966 \times 10^4$
- $8.8857 \times 10^4$
- $4 \times 10^2$
- $-3.1 \times 10^{-3}$
- $6.003 \times 10^{-5}$
- $-1.704 \times 10^3$
- $9 \times 10^1$
- $4.0607^5$
- $-5 \times 10^6$

## Operations With Scientific Notation

Simplify. Write each answer in scientific notation.

1)  $(1.08 \times 10^{-3})(9.3 \times 10^{-3})$

2)  $(2 \times 10^{-4})(8.1 \times 10^{-1})$

3)  $(2.32 \times 10^{-6})(4 \times 10^{-5})$

4)  $(3.48 \times 10^3)(9.8 \times 10^4)$

5)  $(7.1 \times 10^{-5})(6.7 \times 10^{-6})$

6)  $(6 \times 10^3)(9.91 \times 10^0)$

7)  $\frac{7.1 \times 10^6}{8.2 \times 10^1}$

8)  $\frac{5.4 \times 10^{-1}}{3.4 \times 10^1}$

9)  $\frac{4 \times 10^4}{3.63 \times 10^{-4}}$

10)  $\frac{9 \times 10^{-5}}{9.24 \times 10^{-6}}$

11)  $\frac{8.42 \times 10^3}{5 \times 10^2}$

12)  $\frac{8.9 \times 10^6}{8.4 \times 10^6}$