

Scientific Notation and Significant Figures

Scientific Notation

In scientific notation, there is one digit, 1-9, to the left of the decimal and all other figures to the right of the decimal. This number is multiplied by the appropriate power of 10. If the non-exponential number is greater than one, the exponent must be positive and vice versa. If the non-exponential number is less than one, the exponent must be negative and vice versa.

- Write the following numbers in scientific notation.
 - 21.45
 - 0.002
 - 345000
 - 0.000345
 - 5,000,000,000
 - 0.00000750
- Write the following numbers in decimal (non-exponential) notation. Do NOT use your calculator for this!
 - 3×10^{-5}
 - 5.0×10^{-7}
 - 9.1×10^6
 - 8.2×10^0
 - 2.98×10^2

3. Calculate the following using your EE or EXP key on your calculator.

$$(8.3 \times 10^3)(4.1 \times 10^9) =$$

$$(7.52 \times 10^{-9})(3.20 \times 10^4) =$$

$$\frac{(8 \times 10^{-4})(5 \times 10^6)}{8 \times 10^{-7}} =$$

$$\frac{(5.8 \times 10^{-7})(2 \times 10^4)}{4 \times 10^{-6}} =$$

$$\frac{(8.7 \times 10^{-6})}{(3 \times 10^{-4})(6 \times 10^4)} =$$

Significant Figures

How many significant figures are in the following measurements?

- 0.05730 m
- 0.00073 m
- 40.007 g
- 1430 g
- 8.750×10^{-2} g
- 9.8000×10^4 km
- 30.0 m
- 0.07080 m
- 98,000 km
- 22 students