

Chemistry: Scientific Notation Review

A. Express the following numbers in correct scientific notation:

$8.72 \times 10^6 \text{ mm}$  1. 8 720 000 mm

$6.28 \times 10^{-6} \text{ cm}$  2. 0.00 000 628 cm

B. Rewrite the following numbers so they are in correct scientific notation

$6.529 \times 10^7 \text{ L}$  3.  $652.9 \times 10^5 \text{ L}$

$5.98 \times 10^{-18} \text{ mL}$  4.  $0.00 598 \times 10^{-15} \text{ ml}$

$2.59 \times 10^6 \text{ m}$  5.  $0.0 259 \times 10^8 \text{ m}$

C. Carry out the indicated operations and express your answer in correct scientific notation:

$3.34 \times 10^{23} \text{ m}$  6.  $(3.04 \times 10^{22} \text{ m}) + (3.04 \times 10^{23} \text{ m})$   
$$\begin{array}{r} 3.04 \times 10^{22} \\ + 30.4 \times 10^{22} \\ \hline 33.4 \times 10^{22} \end{array} \rightarrow 3.34 \times 10^{23} \text{ m}$$

$6.52 \times 10^5 \text{ km}$  7.  $(6.54 \times 10^5 \text{ km}) - (2.0 \times 10^3 \text{ km})$   
$$\begin{array}{r} 654 \times 10^3 \text{ km} \\ - 2.0 \times 10^3 \text{ km} \\ \hline 652.0 \times 10^3 \text{ km} \end{array} \rightarrow 6.52 \times 10^5 \text{ km}$$

$9.1 \times 10^8 \text{ L}^2$  8.  $(2.5 \times 10^3 \text{ L})(3.62 \times 10^5 \text{ L})$

$5.97 \times 10^0 \text{ cm}^3$  9.  $(9.12 \times 10^1 \text{ cm}^2)(6.55 \times 10^{-2} \text{ cm})$

$2 \times 10^2 \text{ kmol}^3$  10.  $(3.2 \times 10^2 \text{ kmol})(2.0 \times 10^{-5} \text{ kmol})(3 \times 10^4 \text{ kmol})$

$3.04 \times 10^7 \text{ km/s}$  11.  $(3.80 \times 10^4 \text{ km}) \div (1.25 \times 10^{-3} \text{ sec})$

$7.1 \times 10^{-19} \text{ mm}^4$  12.  $(2.5 \times 10^{-7} \text{ mm})(5.0 \times 10^{-8} \text{ mm})(9.5 \times 10^{-14} \text{ mm})(6.0 \times 10^8 \text{ mm})$

$2.9 \times 10^5 \text{ cm}^2$  13.  $(389 000 000 \text{ cm})(0.000 75 \text{ cm})$

$7.9 \times 10^{-9} \text{ g/L}$  14.  $(0.000 686 8 \text{ g}) \div (87 000 \text{ L})$

$2 \times 10^{-41}$  15.  $\frac{(3.5 \times 10^{18} \text{ m})(1.47 \times 10^6 \text{ m})(3.442 \times 10^{-3} \text{ m})(9.97 \times 10^5 \text{ m})}{(9 \times 10^{31} \text{ m})(6.634 \times 10^8 \text{ m})(2.7 \times 10^4 \text{ m})(6.02 \times 10^{23} \text{ m})}$