

Answers

## Scientific Notation/Significant Figures

1. Convert each of the following into scientific notation.

727  $7.27 \times 10^2$

172000  $1.72 \times 10^5$

0.000984  $9.84 \times 10^{-4}$

$200.0 \times 10^2$   $2.0 \times 10^4$

$0.014 \times 10^2$   $1.4 \rightarrow 1.4 \times 10^0$

25 600 000 000 000 000 000 000 000  $2.560 \times 10^{28}$  (use 4 sig. fig.)

2. Convert each into standard form.

$1.56 \times 10^4$  15600

$3.6 \times 10^{-2}$  0.036

$736.9 \times 10^5$  73690000

$0.0059 \times 10^5$  590

$0.00059 \times 10^{-1}$  0.000059

3. Calculate the following. Give the answer in correct scientific notation.

a)  $(2.34 \times 10^{65}) + (9.2 \times 10^{66})$

$9.434 \times 10^{66}$

b)  $(313.0) - (1.2 \times 10^3)$

-887  $-8.87 \times 10^2$

4. Calculate the following. Give the answer in correct scientific notation.

a)  $8.95 \times 10^{76} \div 1.25 \times 10^{56}$

$7.16 \times 10^{20}$

b)  $(4.5 \times 10^{29})(2.45 \times 10^{10})$

$1.1025 \times 10^{40}$

5. Give the number of significant figures in each of the following.

a) 1.05 g 3

b) 0.0003040 mm 4

c) 29000 ft 2

d)  $0.90 \times 10^{45}$  L 2

6. Determine the answer for each of the following. Be sure to use the correct number of significant figures.

a) 
$$\begin{array}{r} 17.34 \\ 4.900 \\ + 23.1 \\ \hline 45.34 \end{array} = \boxed{45.3}$$

b) 
$$\begin{array}{r} 9.80 \\ - 4.762 \\ \hline 5.038 \end{array} \rightarrow \boxed{5.04}$$

c)  $3.9 \times 6.05 \times 420 =$   
$$\begin{array}{r} 9909.9 \\ \hline \boxed{9900} \end{array}$$

d)  $14.1 \div 5 = 2.82 \rightarrow \boxed{2}$

7. Round each of the following to 3 significant figures.

77.0653 77.0

6 300 178.2  $6.3 \times 10^6$

0.00023350 0.000234

10.2030 10.2

$2.895 \times 10^{21}$   $2.90 \times 10^{21}$