Extra Scientific Notation and Significant Figures Problem

Aug 23, 2022

Scientific Notation

1) Perform the following calculations without your calculator. Report to 2 significant figures.

a) $(4.0 \times 10^{-2})(1.5 \times 10^4)$

6.0×10^2

b) $(3.0 \times 10^5)^2$

9.0×10^{10}

c) $1.8 \times 10^4 - 8.9 \times 10^1$

1.8×10^4

Number of Significant Figures

2) Determine te number of significant figures in the following:

a) 0.060580

5 sig figs

b) 6709.201

7 sig figs

c) 14800

3 sig figs

Combining Operations and Significant Figures

3) Using a calculator, express the answers to the following calculations with the proper number of significant figures:

a)

$$\frac{1202}{14.83 + 7.6}$$

$$\frac{1202}{14.83 + 7.6} = \frac{1202}{22.\underline{4}3}$$
$$= 53.6$$

Apply the addition rule. Underlined 4 indicates the number of significant figures for the resulting addition. Hence, the final answer should have 3 significant figures.

b)

$$\frac{1.0 \times 10^{-2}\text{g} - 1.2 \times 10^{-3}\text{g}}{1.579 \times 10^{-1}\text{cm}}$$

Same applies here as in part a). The answer is 0.06 g/cm

c) $(9.2 \times 11.7) + 5.98$

110

d) $(6.2\text{g/mL} \times 1.95\text{mL}) + 0.73\text{g}$

13 g