

Chapter 1 and 2 Review

Give the number of sig figs for each value:

45.07

4

0.00356

3

7000

1

700.

3

100.0

4

3.00×10^5

3

9659

4

6.0×10^{-9}

2

Calculate the following problems:

$$35.0\text{mL} + 36.65\text{mL} + 0.78\text{mL}$$

$$\begin{array}{r} 35.0 \text{ mL} \\ 36.65 \text{ mL} \\ + 0.78 \text{ mL} \\ \hline 72.43 \sim 72.4 \text{ mL} \end{array}$$

$$6.0\text{g} \times 10.3\text{g} \times 4.57\text{g}$$

$$6.0\text{g} \times 10.3\text{g} \times 4.57\text{g} = 282.426$$

$$\sim 2.8 \times 10^2 \text{ g}$$

A rock has a mass of 245g and a volume of 60cm³. What is its density?

$$D = \frac{m}{V} = \frac{245\text{g}}{60\text{cm}^3} = 4.08$$

$$\sim 4 \text{ g/cm}^3$$

$$m = 245\text{g}$$

$$V = 60 \text{ cm}^3$$

An object with a mass of 25.3g is placed in water. The volume of the water started at 15.0 mL. When the object was added, the ending volume was measured at 18.0 mL. What is the density of the object?

$$m = 25.3 \text{ g}$$

$$V = 18.0 \text{ mL} - 15.0 \text{ mL} = 3.0 \text{ mL}$$

$$D = \frac{m}{V}$$

$$\frac{25.3 \text{ g}}{3.0 \text{ mL}} = \boxed{8.4 \text{ g/mL}}$$

The density of acetone is 0.784g/mL. If acetone has a mass of 142g, what is its volume of the liquid in liters?

$$D = 0.784 \text{ g/mL}$$

$$V = D = \frac{m}{V} \cdot V$$

$$V = \frac{m}{D}$$

$$\frac{142 \text{ g}}{0.784 \text{ g/mL}} = 181 \text{ mL}$$

$$m = 142 \text{ g}$$

$$V = ? \text{ L}$$

$$\frac{m}{D} = \frac{VD}{D}$$

$$\frac{181 \text{ mL}}{1000 \text{ mL}} = \boxed{0.181 \text{ L}}$$

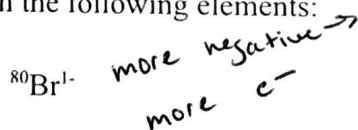
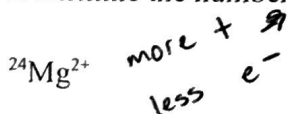
Copper-63 has an atomic mass of 62.93 amu and a percent abundance of 30.9%. Copper-65 has an atomic mass of 64.93 amu with a percent abundance of 69.1%. What is the average atomic mass?

$$\text{Cu-63: } 62.93 \text{ amu} \times 0.309 = 19.4$$

$$\text{Cu-65: } 64.93 \text{ amu} \times 0.691 = 44.9$$

$$+ \boxed{64.3 \text{ amu}}$$

Determine the number of protons, neutrons, and electrons in the following elements:



$$P = 12$$

$$n = 12$$

$$e^- = 10$$

$$24 - 12 = 12$$

$$12 - 2 = 10$$

$$P = 35$$

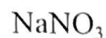
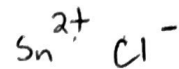
$$n = 45$$

$$e^- = 36$$

$$80 - 35 = 45$$

$$35 + 1 = 36$$

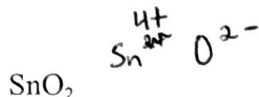
Name the following compounds:



Sodium nitrate

Calcium iodide

Tin (II) chloride



Tin (IV) oxide

dinitrogen tetrahydride

ammonium chloride



-ate \rightarrow -ic

-ide \rightarrow hydro + -ic

diphosphorus pentoxide
 \downarrow
 Pentoxide

phosphoric acid

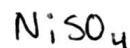
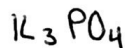
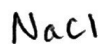
hydrobromic acid

Give the chemical formula for the following compounds:

$\text{Na}^+ \text{Cl}^{-}$
 sodium chloride

$\text{K}^+ \text{PO}_4^{3-}$
 potassium phosphate

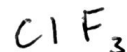
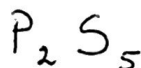
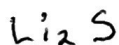
$\text{Ni}^{2+} \text{SO}_4^{2-}$
 nickel (II) sulfate



$\text{Li}^+ \text{S}^{2-}$
 lithium sulfide

diphosphorus pentasulfide

chlorine trifluoride



$\text{Cu}^{2+} \text{CO}_3^{2-}$
 copper (II) carbonate

chlorate
 chloric acid

nitrous acid

-ic \rightarrow -ate

-ous \rightarrow -ite



nitrite

