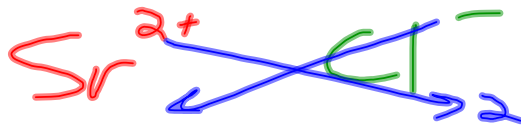


#1) strontium to chlorine in strontium chloride?



$$\frac{\text{Sr}}{\text{Cl}_2} = \frac{87.62 \text{ g/mol}}{(2 \times 35.45 \text{ g/mol})} = 1.24$$

1.24 g Sr : 1 g Cl in SrCl₂

Nov 18-12:50 PM

6. sodium bromide



$$\% \text{Na} = \frac{\text{Na}}{\text{NaBr}} \times 100\% = \frac{22.990 \text{ g/mol}}{102.894 \text{ g/mol}} \times 100\%$$

$$= 22.34\% \text{ Na}$$

$$\% \text{Br} = \frac{\text{Br}}{\text{NaBr}} \times 100\% \quad \text{OR}$$

$$100\% - 22.34\% = 77.66\% \text{ Br}$$

Nov 18-7:54 AM

7 males
13 females

males to females?

$$\frac{7 \text{ males}}{13 \text{ females}} = 0.54 \text{ males} : 1 \text{ female}$$

$$\frac{13 \text{ females}}{7 \text{ males}} = 1.86 \text{ females} : 1 \text{ male}$$

$$\frac{7 \text{ males}}{20 \text{ students}} \times 100\% = 35\% \text{ male}$$

→ 65% female

Nov 18-1:16 PM

Empirical formulas

- simplified chemical formula
- "least common denominator"

$$\frac{4}{6} \Rightarrow \frac{2}{3}$$

e.g. $C_6H_{12}O_6$ glucose

→ CH_2O = empirical formula

- used to identify unknown substances

Nov 18-8:29 AM

p. 193, #7-13

What is the empirical formula of a compound that is 25.9% nitrogen and 74.1% oxygen?

- assume we have 100g

25.9% of 100g = 25.9g N
74.1% of 100g = 74.1g O

convert to moles:

$$\frac{25.9 \text{ g N}}{14.007 \text{ g N}} \times 1 \text{ mol N} = 1.85 \text{ mol N}$$

$$\frac{74.1 \text{ g O}}{15.999 \text{ g O}} \times 1 \text{ mol O} = 4.63 \text{ mol O}$$

1.85 mol N, 4.63 mol O

divide both by the smallest # of moles.

$$\frac{1.85 \text{ mol N}}{1.85} = 1 \text{ N}$$

$$\frac{4.63 \text{ mol O}}{1.85} = 2.50$$

$$\begin{array}{c} \text{N} \quad \text{O} \\ \quad \times 2 \quad \times 2 \\ \hline \text{N}_2 \text{O}_5 \end{array}$$

Nov 18-8:12 AM

p. 193, #35b

79.8% C, 20.2% H

- convert % to g

- convert g to moles

- divide each by smallest # of moles

- fix subscripts in formula as necessary

$$\frac{79.8 \text{ g C}}{12.011 \text{ g C}} \times 1 \text{ mol C} = 6.64 \text{ mol C}$$

$$\frac{20.2 \text{ g H}}{1.0079 \text{ g H}} \times 1 \text{ mol H} = 20.04 \text{ mol H}$$

$$\frac{6.64 \text{ mol C}}{6.64 \text{ mol}} = 1 \text{ C}$$

$$\frac{20.04 \text{ mol H}}{6.64 \text{ mol}} = 3.02 \text{ H} \approx 3 \text{ H}$$

$$\boxed{\text{CH}_3}$$

Nov 18-12:42 PM