

# STOICHIOMETRIC REVIEW

Show all your work. Round to sig. figs. Put a box around your final answer.

Name: \_\_\_\_\_

1) Give the formula for each of the following compounds. (4)

a. Dinitrogen Monoxide  $N_2O$

b. Magnesium chloride  $MgCl_2$

c. Sodium phosphate  $Na_3PO_4$

d. Aluminum nitrite  $Al(NO_2)_3$

2) Name the following compounds. (4)

a.  $N_2O_4$  Dinitrogen tetroxide

b.  $Ca(MnO_4)_2$  Calcium permanganate

c.  $LiBr$  Lithium bromide

c.  $Au_2O_3$  Gold(III) oxide

3) MOLES

a. 1.22 moles of  $LiBr$  = \_\_\_\_\_ g of  $LiBr$

$$\frac{1 \text{ mol } LiBr = 86.84 \text{ g}}{1.22 \text{ mol}} \quad \times$$

$$x = 106 \text{ g of } LiBr$$

b. 56.2 g of  $NH_4OH$  = \_\_\_\_\_ moles of  $NH_4OH$

$$\frac{1 \text{ mol } NH_4OH = 35.06 \text{ g}}{56.2 \text{ g}} \quad \times$$

$$x = 1.60 \text{ mol } NH_4OH$$

4) Balance the equation and solve the question below: 1  $Mg_2Si$  + 2  $H_2O$   $\rightarrow$  1  $SiH_4$  + 2  $MgO$

How many moles of magnesium oxide are produced when 32.4g of  $Mg_2Si$  react with water?

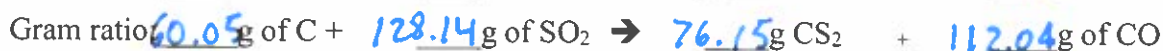
$$\frac{1 \text{ mol } Mg_2Si = 76.71 \text{ g}}{32.4 \text{ g}} \quad \times$$

$$x = 0.42237 \text{ mol } Mg_2Si$$

$$1:2 \text{ ratio } \therefore 0.42237 \times 2 = 0.84474 \text{ mol } MgO$$

$$\boxed{0.845 \text{ mol } MgO}$$

5) Balance the chemical equation below: (Show all your work for the problems below)



a. How many moles of  $CS_2$  are produced when 4.3 moles of  $CO$  are produced?

$$\frac{1 \text{ mol } CS_2 = 4 \text{ mol } CO}{4.3 \text{ mol } CO} \quad \times$$

$$x = 1.075 \text{ mol } CS_2$$

$$\hookrightarrow \boxed{1.1 \text{ mol } CS_2}$$

b. What mass of carbon is needed to completely react with 30.4 grams of  $SO_2$  in the above reaction?

$$\frac{60.05 \text{ g } C = 128.14 \text{ g } SO_2}{30.4 \text{ g } SO_2} \quad \times$$

$$x = 14.2463 \text{ g } SO_2$$

$$\boxed{14.2 \text{ g } SO_2}$$

c. What mass of  $CS_2$  will be produced for every 570.0 g of sulfur dioxide?

$$\frac{76.15 \text{ g } CS_2 = 128.14 \text{ g } SO_2}{570.0 \text{ g } SO_2} \quad \times$$

$$x = 338.735 \text{ g } CS_2$$

$$\hookrightarrow \boxed{338.7 \text{ g } CS_2}$$