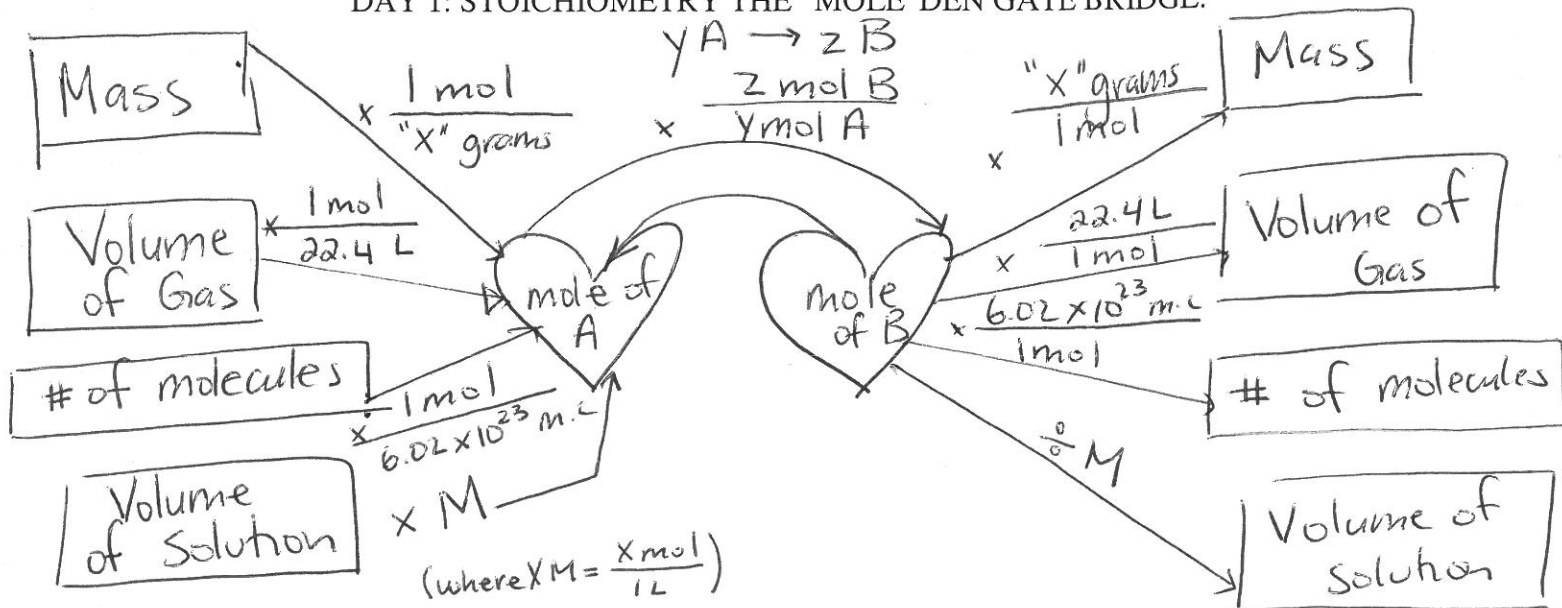


Name: Key
Pd: _____ Date: _____

REVIEW OF CHEMISTRY 11 FOR CHEMISTRY 12
DAY 1: STOICHIOMETRY THE "MOLE" DEN GATE BRIDGE:



Example A.

When propane reacts with oxygen in a combustion reaction, 32.0 grams of oxygen are required.

1. Write out the balanced equation?



$$\begin{array}{r} 3\text{C} = 36.0 \\ 8\text{H} = \underline{8.0} \\ \hline 44.0 \end{array}$$

2. What mass of propane is required to completely react with the 32.0 grams of oxygen?

$$32.0\text{g O}_2 \times \frac{1\text{mol O}_2}{32.0\text{g}} \times \frac{1\text{mol C}_3\text{H}_8}{5\text{mol O}_2} \times \frac{44.0\text{g}}{1\text{mol C}_3\text{H}_8} = \boxed{8.80\text{g C}_3\text{H}_8}$$

3. How many litres of Carbon dioxide gas will form if the reaction takes place at STP?

$$32.0\text{g O}_2 \times \frac{1\text{mol O}_2}{32.0\text{g}} \times \frac{3\text{mol CO}_2}{5\text{mol O}_2} \times \frac{22.4\text{L}}{1\text{mol}} = \boxed{13.4\text{L of CO}_2}$$

$$\begin{aligned}
 1 \text{ Ca} &= 40.1 \\
 3 \text{ O} &= 48.0 \\
 1 \text{ C} &= 12.0 \\
 4 \text{ H} &= 4.0 \\
 2 \text{ O} &= 32.0 \\
 \hline
 &= 136.1 \text{ g}
 \end{aligned}$$

Example B.

A specialized neutralization reaction between Hydrochloric acid and Calcium carbonate dihydrate produces calcium chloride, carbon dioxide and water.

1. Write out the balanced equation.



2. What mass of Calcium carbonate dihydrate is required if 250 mL of 3.0 M HCl is used?

$$0.25 \text{ L} \times \frac{3.0 \text{ mol HCl}}{1 \text{ L}} \times \frac{1 \text{ mol CaCl}_2 \cdot 2\text{H}_2\text{O}}{2 \text{ mol HCl}} \times \frac{136.1 \text{ g}}{1 \text{ mol}}$$

3. How many Litres of ^{CO₂} calcium chloride will form?

$$= \boxed{51.0 \text{ g}}$$

$$0.25 \text{ L} \times \frac{3.0 \text{ mol HCl}}{1 \text{ L}} \times \frac{1 \text{ mol CO}_2}{2 \text{ mol HCl}} \times \frac{22.4 \text{ L}}{1 \text{ mol}}$$

$$= \boxed{8.4 \text{ L of CO}_2}$$

Work on Examples 6-12