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

STOICHIOMETRY PRACTICE,  MOLE TO MOLE, MASS TO MOLE, & MOLE TO MASS EQUATIONS.

1.   Given the following equation:  2 C4H10  +  13 O2  ®  8 CO2  +  10 H2O,  Show what the following molar ratios should be:

a.       \_\_\_\_\_\_ C4H10 /  \_\_\_\_\_\_ O2

b.       \_\_\_\_\_\_ O2  /  \_\_\_\_\_\_  CO2

c.       \_\_\_\_\_\_ C4H10  /  \_\_\_\_\_\_ H2O

d.       \_\_\_\_\_\_ O2  /  \_\_\_\_\_\_ H2O

e.       \_\_\_\_\_\_ C4H10 /  \_\_\_\_\_\_ CO2

 2.   Given the following equation:  2 KClO3  ® 2 KCl + 3 O2.  How many moles of oxygen can be produced by letting 12.00 moles of KClO3 react?

 3.   How many moles of oxygen are necessary to react completely with four moles of propane (C3H8) to form carbon dioxide and water?

  4.   How many moles of methane, CH4, will form if 24 grams of carbon react with 4 grams of hydrogen gas?

  5.   Calculate the number of grams of sodium oxide, Na2O, that will be provided when 5.00 moles of solid sodium react with oxygen gas?

6. One way to remove CO2 from air that must be recirculated (such as in a spacecraft cabin) is to react it with LiOH to form Li2CO3 and water. How many grams of LiOH are needed for a 6 day, 3 person, mission – if in one day, a person exhales about 1.0 kg of CO2 ?

7. A trip to 7-11 in your SUV burns 2861 grams of Octane, C8H18 . Calculate the mass of CO2 created from the combustion reaction needed for your trip.

8. \_\_\_\_\_\_ PCl5 + \_\_\_\_\_\_ H2O → \_\_\_\_\_\_ H3PO4 + \_\_\_\_\_\_ HCl

When Mike goes into the lab and has 4.70 grams of phosphorus pentachloride react with excess water - Mike recovers 1.75 grams of phosphoric acid, H3PO4.

 a) Calculate the theoretical yield of phosphoric acid ( in grams )

 b) Calculate the percent yield of phosphoric acid