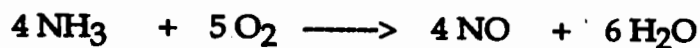


Stoichiometry Worksheet I

Note: Answers are provided in () but may not match yours in terms of sig figs

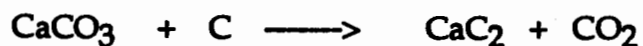
Name _____ Section _____ Due Date _____

1. Ammonia gas reacts with oxygen gas according to the following equation:



- a. How many moles of oxygen gas are needed to react with 23 moles of ammonia? (29 mole)
- b. How many grams of NO are produced when 25 moles of oxygen gas react with an excess of ammonia? (600 g)
- c. If 24 grams of water are produced, how many moles of nitrogen monoxide are formed? (0.89 mole)
- d. How many grams of oxygen are needed to react with 6.78 grams of ammonia? (16.0 g)

2. The compound calcium carbide, CaC_2 , is made by reacting calcium carbonate with carbon at high temperatures. The UNBALANCED EQUATION for the reaction is:



- a. Balance the equation.
- b. How many moles of carbon are required to produce 5.0 moles CO_2 ? (8.3 mole)
- c. How many grams of calcium carbide are produced when 4.0 moles of carbon react with an excess of calcium carbonate? (102 g)
- d. How many moles of carbon dioxide are produced when 55 grams of calcium carbonate react with an excess of carbon? (0.83 mole)
- e. How many grams of carbon are needed to react with 453 grams of calcium carbonate? (136 g)
- f. How many grams of calcium carbonate are needed to form 598 grams of calcium carbide? (934 g)

Stoichiometry Worksheet II

Name _____

For the given combustion reaction of octane, C_8H_{18} , answer the following questions:
(Answers to the questions are given in parenthesis.)



- Write all possible molar ratios from this equation.
- How many moles of CO_2 would be produced by reacting 0.67 moles of octane with excess of oxygen? (Amount of oxygen is not involved in the calculation) (5.4 mol CO_2)
- How many moles of H_2O would be produced by reacting 0.67 moles of octane with excess of oxygen? (6.0 mol H_2O)
- If we react 225 g of octane C_8H_{18} with oxygen, how many moles of O_2 are required? (24.7 mol O_2)
- If we react 225 g of octane C_8H_{18} with excess oxygen, how many moles of CO_2 are produced? (15.8 mol CO_2)



f. If we react 225 g of octane C_8H_{18} with excess oxygen, how many moles of H_2O are produced? (17.8 mol H_2O)

g. If we wish to make 7.5 mol CO_2 , how many grams of C_8H_{18} will be used? (110 g C_8H_{18})

h. If we wish to make 7.5 mol CO_2 , how many grams of O_2 do we need? (380 g O_2)

i. If we wish to make 7.5 mol CO_2 , how many grams of H_2O will be produced? (150 g H_2O)

j. If we have 3.56 g C_8H_{18} , how many grams of O_2 do we need to react with it? (12.5 g O_2)

k. If we have 3.56 g C_8H_{18} , how many grams of CO_2 will be produced? (11.0 g CO_2)

l. If we have 3.56 g C_8H_{18} , how many grams of H_2O will be produced? (5.06 g H_2O)

m. Using the answers from j, k, and l for burning of 3.56 g of octane, check if the law of conservation of mass is obeyed or not.