Limiting Reactant #2

Name: _____

Part 1: Mole Ratio

1a) Balance the equation: _____ H_2 + _____ S_8 --> _____ H_2S,

b) write the following molar ratios:

a) H_2S / S_8 ____ / ____ H_2 / H_2S ____ / ____ H_2 / S_8 ____ / ____

c) Fill in the table below:

H_2	S_8	H_2S
24 moles		
	16 moles	
		0.87 moles
	9.63 moles	

2) Balance the equation ___Sb_2O_3 + ___C --> ___Sb + ___CO

b) write the following molar ratios:

Sb_2O_3/CO ____ / ____ C/Sb ____ / ____

c) Fill in the table below:

Sb_2O_3	C	Sb	CO
		24 moles	
			90 moles
8.3 moles			
	7.21 moles		

Part 2: Limiting Reactant

3a) Given the following equation: 2 Zn +O_2 --> 2 ZnO. Calculate how many moles of zinc oxide can be produced from 7.3 moles of oxygen?

b) If 1.98 moles of ZnO are formed, how many moles of O_2 were used?

4a) For the reaction $2\ C_2H_2 + 5\ O_2 \dashrightarrow 4\ CO_2 + 2\ H_2O$, how many moles of oxygen are required to produce 0.9 moles of CO_2 ?

b) If 4.7 moles of C_2H_2 are combined with 13.2 moles of O_2, which reactant would run out first? Show your work or explain your reasoning.

c) If 18.7 moles of O_2 are combined with 4.5 moles of C_2H_2, which reactant would run out first? Show your work or explain your reasoning.

5a) Balance: ___C_3H_8 + ___O_2 ---> ___ CO_2 + ___ H_2O

b) If you start with 2 moles of C_3H_8 and 20 moles of O_2, determine the limiting reagent.

c) which reactant is in excess? How many moles are in excess?

d) determine the number of <u>moles</u> of carbon dioxide produced.

6) Given the following equation: $Al_2(SO_3)_3 + 6\ NaOH \dashrightarrow 3\ Na_2SO_3 + 2\ Al(OH)_3$

a) If 24 moles of $Al_2(SO_3)_3$ is reacted with 24 moles of NaOH, determine the limiting reagent.

b) which reactant is in excess? How many moles are in excess?

c) Determine the number of <u>moles</u> of $Al(OH)_3$ produced.

d) Determine the number of moles of Na_2SO_3 produced.