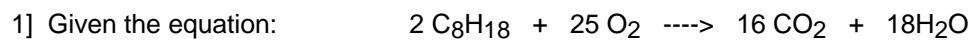


Equation Stoichiometry
CHEMISTRY 110

Name _____
last first

Problem sets are due within the first 5 minutes of lecture on the due date. Significant figures must be correct. All set-ups must be shown for credit



a. How many moles of oxygen gas are required to make 8.33 moles of carbon dioxide?

Answer _____

b. How many moles of C_8H_{18} must be used to produce 1.99 grams of water

Answer _____

c. If the reaction produces 5.3 mg of carbon dioxide how many grams of water are produced?

Answer _____

d. How many grams of oxygen are needed to react with 7.22×10^{24} molecules of C_8H_{18} ?

Answer _____

2] How many grams of aluminum oxide are formed when 25.0 grams of Aluminum are reacted with oxygen gas?

a. Write the balanced equation

b. Calculate the number of grams of aluminum oxide produced

Answer _____

3] A sample of TiCl_4 is reacted with Titanium metal to produce Titanium (III) chloride

a. Write the balanced equation

b. How many kg of Titanium (III) chloride was produced from 52 kg of Titanium (IV) chloride?

Answer _____

4] Given the equation: $\text{Al}_4\text{C}_3 + 12 \text{H}_2\text{O} \rightarrow 4 \text{Al}(\text{OH})_3 + 3 \text{CH}_4$

a. How many grams of water are needed to react with 100.0 moles of Al_4C_3 ?

Answer _____

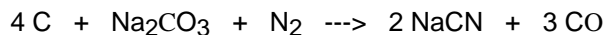
b. How many moles of Al_4C_3 were reacted when 3.55×10^{35} formulas units of aluminum hydroxide were produced

Answer _____

c. How many grams of aluminum hydroxide were produced when 673 mg of CH_4 were formed.?

Answer _____

5] Given the reaction:



181 grams of sodium carbonate were added to carbon and nitrogen.

After the reaction finished, 35 g of of **unreacted sodium carbonate remained.**

a. How many moles of carbon monoxide were produced?

Answer _____

b. How many grams of nitrogen gas reacted with the sodium carbonate?

Answer _____