Stoichiometry Re-Test

Name:_____

Directions: Solve each problem. In order to receive credit, you must show all your work in pen or pencil and email me a picture or scan of your work and answers at kara.harris@cobbk12.org by the end of class on Thursday, 12/10/2020.

$$4\ Fe\ (s) + 3\ O_2\ (g) \rightarrow 2\ Fe_2O_3\ (s)$$

1. How many moles of oxygen are required to react completely with 0.750 moles of iron?

2. How many moles of iron (III) oxide are produced from the reactions of 100. g of iron with excess oxygen?

3. What mass of oxygen is needed to produce 30.0 moles of iron (III) oxide?

4. What is the theoretical yield of iron (III) oxide from the reaction of 50.0 g of iron with excess oxygen?

$$CH_4\ (g) + 3\ Cl_2\ (g) \rightarrow CHCl_3\ (s) + 3\ HCl\ (g)$$

5. What is the theoretical yield of chloroform ($CHCl_3$) produced when 22.0g of CH_4 (methane) reacts with 220. g of chlorine gas?

6. What is the limiting reactant?

7. What is the excess reactant?

8. What is the % yield if 95.0 g of chloroform are actually produced?