Chemistry

Name _____

BLOCK_____Date_____

Chemical Reactions

STOICHIOMETRY WORKSHEET B

1. $C_6H_6 + Cl_2 \rightarrow C_6H_5Cl + HCl$

(a) Write the balanced equation for the reaction.

(b) What is the theoretical yield of C_6H_5Cl if 45.6 grams of C_6H_6 reacts?

GIVEN: WORK: ANSWER:

DESIRED:

(c) If the actual yield is 63.7 grams of C_6H_5Cl, calculate the percent yield?

GIVEN: WORK: ANSWER:

DESIRED:

(d) What is the theoretical yield of C_6H_5Cl if 35.4 grams of chlorine gas reacts?

GIVEN: WORK: ANSWER:

DESIRED:

(e) If the actual yield of C_6H_5Cl is 53.5 grams, what is the percent yield?

GIVEN: WORK: ANSWER:

DESIRED:

2. Carbon disulfide and oxygen gas react to form carbon dioxide and sulfur dioxide.

(a) Write the balanced equation for the reaction.

(b) What is the theoretical yield of sulfur dioxide if 25.0 grams of carbon disulfide reacts?

GIVEN: WORK: ANSWER:

DESIRED:

(c) If the actual yield of sulfur dioxide is 40.5 grams, what is the percent yield?

GIVEN: WORK: ANSWER:

DESIRED:

3. Arsenic (III) oxide reacts with carbon to produce carbon dioxide and arsenic.

(a) Write the balanced equation for the reaction.

(b) What is the theoretical yield of arsenic if 8.87 grams of arsenic (III) oxide reacts?

GIVEN: | WORK: | ANSWER:

DESIRED:

(c) If the actual yield of arsenic is 5.33 grams, what is the percent yield?

GIVEN: | WORK: | ANSWER:

DESIRED:

(d) If the actual yield of arsenic is 4.85 grams, what is the percent yield?

GIVEN: | WORK: | ANSWER:

DESIRED:

4. Mercury (II) oxide reacts with chlorine gas to produce mercury (II) chloride and dichlorine monoxide

(a) Write the balanced equation for the reaction.

(b) What is the theoretical yield of mercury (II) chloride if 55.7 grams of mercury (II) oxide reacts?

GIVEN: | WORK: | ANSWER:

DESIRED:

(c) If the actual yield of mercury (II) chloride is 65.5 grams, what is the percent yield?

GIVEN: | WORK: | ANSWER:

DESIRED:

(d) If the actual yield of mercury (II) chloride is 60.5 grams, what is the percent yield?

GIVEN: | WORK: | ANSWER:

DESIRED:

5. In a combustion reaction tricarbon octohydride reacts with oxygen.

Write the balanced equation for the reaction.

If you start with 14.8g of C_3H_8 and 3.44g of O_2 determine the limiting reactant.

GIVEN:	WORK:	ANSWER:
DESIRED:		

Determine the number of moles of carbon dioxide produced.

GIVEN:	WORK:	ANSWER:
DESIRED:		

Determine the number of grams of water produced.

GIVEN:	WORK:	ANSWER:
DESIRED:		

Determine the number of grams of excess reagent left over in the reaction.

GIVEN:	WORK:	ANSWER:
DESIRED:		

6. In a double replacement reaction aluminum sulfite and sodium hydroxide react.

(a) Write the balanced equation for the reaction.

(b) If you start with 10.0 g of $Al_2(SO_3)_3$ and 10.0g of NaOH determine the limiting reactant.

GIVEN:

DESIRED:

WORK:

ANSWER:

(c) Determine the number of moles of aluminum hydroxide produced.

GIVEN:

DESIRED:

WORK:

ANSWER:

(d) Determine the number of grams of sodium sulfite produced.

GIVEN:

DESIRED:

WORK:

ANSWER:

(e) Determine the number of grams of excess reagent left over in the reaction.

GIVEN:

DESIRED:

WORK:

ANSWER:

7. In a single replacement reaction of Iron (IV) and Aluminum oxide.

(a) Write the balanced equation for the reaction.

(b) If you start with 25.4g of Al_2O_3 and 10.2g of Fe determine the limiting reactant.

GIVEN:	WORK:	ANSWER:
DESIRED:		

(c) Determine the number of moles of aluminum produced.

GIVEN:	WORK:	ANSWER:
DESIRED:		

(d) Determine the number of grams of Iron (IV) oxide produced.

GIVEN:	WORK:	ANSWER:
DESIRED:		

(e) Determine the number of grams of excess reagent left over after the reaction.

GIVEN:	WORK:	ANSWER:
DESIRED:		