Solution Stoichiometry Name_____
CHEMISTRY 110 last first

1] How many grams of calcium phosphate can be produced from the reaction of 2.50 L of 0.250 M Calcium chloride with and excess of phosphoric acid?

Calcium chloride + phosphoric acid --> calcium phosphate + hydrochloric acid

Answer _____

2] How many milliliters of 1.50 M Nitric acid is required to react with 100.0 g of cuprous oxide

$14\ HNO_3 + 3\ Cu_2O \rightarrow 6\ Cu(NO_3)_2 + 2\ NO + 7\ H_2O$

Answer _____

3] 60.5 mL of HNO_3 are required to react with 25.0 mL of a 1.00 M Barium hydroxide solution:

$HNO_3(aq) + Ba(OH)_2(aq) \rightarrow H_2O(s) + Ba(NO_3)_2(aq)$ (UNBALANCED)

Find the **Molarity** of the nitric acid solution

Answer _____

4] For the following equation determine which reactant is the limiting reactant and which reactant is in excess. The amounts of reagent used are shown. Show calculations to support your choices

$3Fe + 4H_2O \rightarrow Fe_3O_4 + 4H_2$

40.0 g 16.0g

The limiting reactant is _____ The excess reactant is _____

5] 35.5 g of silver nitrite is reacted with 35.5 grams of sodium sulfide which produces silver sulfide and sodium nitrite.

a. Write and balance the equation

b.. Calculate the number of grams of silver sulfide produced.

Answer _____

c. How many grams of silver nitrite will remain at the end of the reaction?

Answer _____

d. How many grams of sodium sulfide will remain at the end of the reaction?

Answer _____

6] Calculate the grams of silver chloride produced from 10.00 ml of 10.0M magnesium chloride with 100.0 ml of 2.20 M silver nitrate

$$2AgNO_3 + MgCl_2 \rightarrow Mg(NO_3)_2(s) + 2AgCl(aq)$$

Answer _____

7] Aluminum reacts with oxygen to form aluminum oxide: $Al + O_2 \rightarrow Al_2O_3$ (unbalanced)
If 75.0g of Al and 200.0 g of oxygen are reacted, and 75.0 g of aluminum oxide is produced, what is the percent yield for the reaction?

Answer _____

8] . According to the following reaction:..... $2\ Cu(s) + O_2(g) \rightarrow + 2\ CuO(s)$

a. If the percentage yield is 96.7% how many grams of CuO will be produced from 13.4 g of Cu?

Answer _____

b..How many grams of Cu must you use to produce 5.00×10^{13}mg CuO?

Answer _____