Stoichiometry Practice

Mole to Mole Problems:

1. How many mole of calcium hydroxide, $Ca(OH)_2$, can be produced from reacting 23.5 moles of CaC_2 with an unlimited amount of water? The other product is C_2H_2.

   b. How many mole of water was used?

2. How many mole of Sulfur trioxide can be produced from reacting 2.33 mole of sulfur dioxide with an unlimited mass of oxygen gas?

   b. How many mole of oxygen gas were used?

3. Sulfuric acid decomposes to form sulfur trioxide and water vapor. How many mole of sulfur trioxide are formed from decomposition of 13.2 moles of H_2SO_4?

   b. How many mole of water vapor were produced?

4. Reacting 9.00 mole of aluminum metal with unlimited amounts of oxygen gas will form how many moles of aluminum oxide?

   b. How many mole of oxygen were used?

Mole to Mass Problems:

(note: Use the same balanced equations from the last page)

1. How many grams of calcium hydroxide, $Ca(OH)_2$, can be produced from reacting 23.5 mole of CaC_2 with an unlimited amount of water? The other product is C_2H_2.

   b. How many grams of water was used?

2. How many grams of Sulfur trioxide can be produced from reacting 2.33 mole of sulfur dioxide with an unlimited mass of oxygen gas?

   b. How many grams of oxygen gas were used?

3. Sulfuric acid decomposes for form sulfur trioxide and water vapor. How many grams of sulfur trioxide are formed from decomposition of 13.2 moles of H_2SO_4?

   b. How many grams of water vapor were produced?

4. Reacting 9.00 mole of aluminum metal with unlimited amounts of oxygen gas will form how many grams of aluminum oxide?

   b. How many grams of oxygen were used?

Mass to Mass Problems:

(remember to balance the equation)

1. What mass of water could be produced from reacting 12.7 grams of hydrogen with oxygen gas?

   b. What mass of oxygen was used?

2. Lithium chloride is formed from the reaction of 13.9 grams of chlorine gas. How many grams of lithium was used?

   b. How many grams of lithium chloride were formed?

Answers:

Mole to Mole

1. 23.5 mole $Ca(OH)_2$ b. 47.0 mol H_2O
2. 2.33 mole SO_3 b. 1.16 mole O_2
3. 13.2 mole SO_3 b. 13.2 mole H_2O
4. 4.5 mole Al_2O_3 b. 6.75 mole O_2

Mole to Mass

1. 1740 g $Ca(OH)_2$ b. 846 g H_2O
2. 186 g SO_3 b. 37.3 g O_2
3. 1060 g SO_3 b. 238 g H_2O
4. 459 g Al_2O_3 b. 216 g O_2

Mass to Mass

1. 114 g H_2O b. 102 g O_2
2. 2.72 g Li b. 16.6 g LiCl