Name:_____

Stoichiometry Quiz #2

1. What mass of lithium carbonate can be formed from 22.9 g of lithium chloride when reacted with adequate sodium carbonate.

$$2LiCl + Na_2CO_3 \rightarrow Li_2CO_3 + 2NaCl$$

$$22.9\text{ g LiCl} \times \frac{1\text{ mol LiCl}}{42.39\text{ g LiCl}} \times \frac{1\text{ mol } Li_2CO_3}{2\text{ mol LiCl}} \times \frac{73.89\text{ g } Li_2CO_3}{1\text{ mol } Li_2CO_3} = 19.96\text{ g } Li_2CO_3$$

2. For the following reaction, determine the mass of Fe_2O_3 that can form from 250 g of Fe_3O_4. What mass of carbon dioxide would form along with Fe_2O_3

$$2Fe_3O_4 + CO_2 \rightarrow 3Fe_2O_3 + CO$$

$$250\text{ g } Fe_3O_4 \times \frac{1\text{ mol } Fe_3O_4}{231.55\text{ g } Fe_3O_4} \times \frac{3\text{ mol } Fe_2O_3}{2\text{ mol } Fe_3O_4} \times \frac{159.70\text{ g } Fe_2O_3}{1\text{ mol } Fe_2O_3} = 258.64\text{ g } Fe_2O_3$$

$$250\text{ g } Fe_3O_4 \times \frac{1\text{ mol } Fe_3O_4}{231.55\text{ g } Fe_3O_4} \times \frac{1\text{ mol CO}}{2\text{ mol } Fe_3O_4} \times \frac{28.01\text{ g CO}}{1\text{ mol CO}} = 15.1\text{ g CO}$$