Gases and Stoichiometry Part 1

1. How many L of nitrogen are required to produce 646 L of NH_3?

    $N_2 (g) + 3 H_2 (g) \rightarrow 2 NH_3 (g)$

2. How many liters of O_2 are needed to react with 125.62 g of methane?

    $CH_4 (g) + O_2 (g) \rightarrow CO_2 (g) + H_2O (g)$

3. Consider the following reaction.

    $HC_3H_3O_3 (aq) \rightarrow C_2H_4O (aq) + CO_2 (g)$

    How many grams of pyruvic acid, $HC_3H_3O_3$, were reacted if the sample gives 285.52 mL CO_2 gas at 756 mmHg at 28.0°C?