# Accelerated Chemistry: Weekly Review #2 – Gas Calculations

1. If I have 1.2 L of gas at a pressure of 0.25 atm and a temperature of 23.0°C, what will be the temperature of the gas if I increase the volume of the gas to 2.50 L and increase the pressure to 1.3 atm?

2. Determine the volume that 0.065 moles of carbon dioxide occupies at STP.

3. A 13.0 g sample of CO_2 has a volume of 32.0 L and a pressure of 0.656 atm. What must be the temperature of the gas?

4. When ammonium hydroxide decomposes, water and ammonia gas are produced according to the following equation:

$$NH_4OH(aq) \rightarrow H_2O(l) + NH_3(g)$$
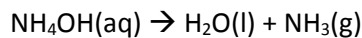
What volume of NH_3, measured at STP, is produced if 10.5 g of ammonium hydroxide reacts?

5. When excess water is added to 3.60 grams of magnesium nitride, what volume of ammonia gas (NH_3) would be collected at 46°C and 738 mm Hg?

$$Mg_3N_2(s) + 3H_2O(l) \rightarrow 3MgO(s) + 2NH_3(g)$$