

# Gas Stoichiometry

\* Remember the Law of combining volumes: When gases react, the volume of the reactants and products measured at equal temperature and pressure follow the mole ratios!

Ex 1. 1.85 L of nitrogen gas reacts with hydrogen gas to produce ammonia.

a) What volume of  $H_2$  is needed to completely react the nitrogen sample?

b) What volume of  $NH_3$  will be produced?

\* Remember that we can add the ideal gas law to the mole map!

Ex 2. 5.2 g of Mg is reacted with excess  $H_2SO_4$ . What volume of  $H_2$  gas is produced at STP?

Ex 3. 42.5 L of  $O_2$  gas at SATP is burned with 10.98 g of  $CH_4$ . What volume of  $CO_2$  is produced, if the final temp and pressure is  $48.0\text{ }^\circ\text{C}$  and 102.6 kPa?