

# Gas Stoichiometry

## Chem Worksheet 14-5

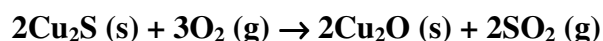
Name \_\_\_\_\_

Use your knowledge of *Stoichiometry* and the *Ideal Gas Law* to solve the following problems. The chemical equations given are all balanced.

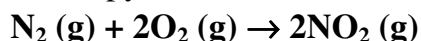
1. What volume of O<sub>2</sub> is produced when 28.5 g of hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) decomposes to form water and oxygen at 150°C and 2.0 atm?



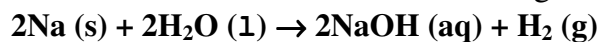
2. This reaction uses 18.2 g of copper (I) sulfide (Cu<sub>2</sub>S). What volume of sulfur dioxide gas would be collected at 237°C and 10.7 atm?



3. When 62.7-g nitrogen and excess oxygen react they generate nitrogen dioxide. If the NO<sub>2</sub> is collected at 625 K and 0.724 atm, what volume will it occupy?



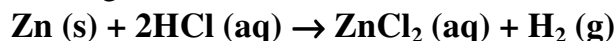
4. What volume of hydrogen gas is evolved from a reaction between 0.52 g of Na and water? The gas is collected at 20.°C and 745 mmHg.



5. At what pressure is the nitrogen gas sample that is collected when 48.4 g of NaN<sub>3</sub> decomposes? The temperature of the gas is 25°C and the volume is 18.4 L.



6. When 2.4-g zinc is added to hydrochloric acid, 450 mL of hydrogen gas forms at a temperature of 32°C. What is the pressure of the gas?



7. The following reaction forms 6.41 L of oxygen at a temperature of 18.7°C and a pressure of 731 torr, what mass of KClO<sub>3</sub> must have decomposed?



8. What mass of CaSO<sub>3</sub> must have been present initially to produce 14.5 L of SO<sub>2</sub> gas at a temperature of 12.5°C and a pressure of 1.10 atm?

