

Ideal Gas Law Practice Problems

Name: _____ p. _____

$$PV=nRT$$

- 1) STP = standard temperature: _____K and standard pressure: _____atm
- 2) At STP, one mole of any ideal gas takes up approximately _____ Liters.
- 3) R is called the ideal gas law constant. What is the numerical value and the units for this constant?

- 4) How many moles of gas does it take to occupy 2.25 L at STP?

- 5) A 1.00 L aerosol canister holding 2.00 moles of gas is thrown in a campfire (not safe!). The temperature inside the metal can reaches 1,673 K right before it explodes, sending shrapnel in all directions. What was the pressure of the can right before it exploded?

- 6) I have a balloon that can hold 50.0 L of air. If I blow up this balloon with 96.00 g of O₂ gas to a pressure of 1.00 atmosphere, what would the temperature inside the balloon be?

- 7) You perform a reaction that captures 1.00 g of H₂ gas in a glass bottle with a volume of 1,500. mL. The temperature in the bottle is 23.0°C. Find the pressure of the H₂ gas inside the bottle.

- 8) Using STP conditions, find the value of the R constant using these particular units: (mL x kPa)/(mol x K)