

Chapter 5: Gas Laws Worksheet #1

- Convert 898.5 mmHg to:
 - atmospheres **1.182 atm**
 - torr **898.5 torr**
- Acetylene is a gas used as a fuel for some welding torches. If 0.52 L of acetylene has a pressure of 1824 torr, what is the pressure (in atm) if the volume is decreased to 0.39 L?
3.2 atm
- A sample of carbon dioxide has a volume of 19.4 L at 10.8 °C. What is the volume of the same sample of carbon dioxide at 14.6 °C.
19.7 L
- A balloon at 23 °C contains 0.32 moles of helium gas at 2432 torr. The volume of the helium is 2.45 L. If an additional 0.14 mole of He is injected into the balloon while holding the temperature and pressure constant, what is the volume of the balloon?
3.5 L
- A gas (0.020 mole) has a pressure of 0.63 atm at 26.4 °C, and a volume of 0.79 L. If the temperature is lowered by 5.2 °C and the pressure is increased to 0.96 atm, what is the new volume?
0.51 L
- A mixture of methane and carbon monoxide gas at 0 °C has a total volume of 12.9 L and the quantity of gas is 0.90 mole. What is the total pressure of this mixture?
1.6 atm
- Magnesium metal reacts with hydrochloric acid to produce magnesium chloride and hydrogen gas. What mass of magnesium is needed to react with excess hydrochloric acid to produce 0.25 L hydrogen gas at STP (1.0 atm and 0.0 °C)?
0.27 g Mg
- A 1.75 mole sample of argon is introduced into a 10.0 L container at a temperature of 15 °C. What is the pressure in the container?
4.14 atm

9. What is the temperature of a 0.65 L sample of fluorine gas at 620 torr that contains 1.3 mole fluorine?

-270 °C

10. One balloon contains 3.6 L and 1.6 mole of He gas. If a second balloon contains 3.1 mole of He, what is the volume of the gas in the second balloon if the temperature and pressure of both balloons is the same?

7.0 L