**Boyles Law**

1. A sample of hydrogen gas has a volume of 0.300L. If it is compressed into a volume of 0.200L at a pressure of 300kPa, what was the initial pressure on the gas? Assume constant temperature. **(200 kPa)**
2. Nitrogen in a 250mL container at 65.0 kPa is transferred to a container with a volume of 600mL. Calculate the new pressure if the temperature is kept constant. **(27.1 kPa)**
3. A 600mL sample of HCl(g) has a pressure of 150kPa. If it is transferred to a vessel with a volume of 0.350L, what is the new pressure? **(257 kPa)**
4. A 1.5L container is filled with argon gas at a pressure of 1.5atm. What is the final volume if the pressure is dropped to 0.85atm? **(2.6L)**
5. The volume of a weather balloon is 30.0L after the pressure has been changed from 785mmHg to 742mmHg. What was the original volume of the balloon? **(28.4L)**
6. A flexible container has a volume of 10.0L. If the pressure is tripled, what will the new volume be? **(3.33L)**

**Charles Law**

1. A 400mL sample of a gas at 10°C is warmed to 25°C at a constant pressure. Calculate the final volume assuming constant pressure. **(0.42L)**
2. A sealed syringe contains 25.0mL of trapped air at 20.0°C. If the sun shines on the syringe and the volume increases to 26.8mL, what is the new temperature? **(314K)**
3. A 45.0L sample of gas is under a pressure of 4.50atm. If the original pressure was 6.25atm, what was the original volume? **(32.4L)**
4. A balloon is filled to a volume of 1.5L at room temperature (23°C). The balloon will burst if it reaches a volume of 2.0L. A student takes the balloon outside where the air temperature is 39°C. Does the balloon burst?
5. The volume of a gas is originally 15L. If the temperature is quadrupled, what will the new volume be? **(60L)**