**Boyle’s, Charles’s, and Gay-Lussac’s Laws Practice Problems**

1. 10.0 L of a gas is found to exert 97.0 kPa at 25.0°C. What would be the required temperature (in Celsius) to change the pressure to standard pressure?
2. A gas occupies 25.3 mL at a pressure of 790.5 mm Hg. Determine the volume (in mL) if the pressure is reduced to 0.804 atm.
3. The temperature inside my refrigerator is about 40 Celsius. If I place a balloon in my fridge that initially has a temperature of 220 C and a volume of 0.5 liters, what will be the volume (in L) of the balloon when it is fully cooled by my refrigerator?
4. 300. mL of O2 are collected at a pressure of 645 mm Hg. What volume (in mL) will this gas have at one atmosphere pressure?
5. 5.00 L of a gas is collected at 22.0°C and 745.0 mmHg. When the temperature is changed to standard, what is the new pressure (in atm)?
6. A man heats a balloon in the oven. If the balloon initially has a volume of 0.4 liters and a temperature of 20 0C, what will the volume (in L) of the balloon be after he heats it to a temperature of 350 0C?
7. On hot days, you may have noticed that potato chip bags seem to “inflate”, even though they have not been opened. If I have a 250.0 mL bag at a temperature of 19.0 0C, and I leave it in my car during a hot, summer afternoon, the bag’s new volume is 285 mL. What is the new temperature (in °C) in my car?
8. Convert 350.0 mL at 740.0 mm of Hg to its new volume at standard pressure.
9. A gas is at 0.370 atm and 50.0 °C. What is the pressure (in torr) at standard temperature?
10. A soda bottle is flexible enough that the volume of the bottle can change even without opening it. If you have an empty soda bottle (volume of 2 L) at room temperature (25 0C), what will the new volume be if you put it in your freezer (-12 0C)?
11. A gas is at 556 torr and 65.0 °C. What is the new temperature (in Celsius) when the pressure drops to 0.5 atm?
12. A gas has a pressure of 4.62 atm when its volume is 2.33 L. What will be the pressure (in torr) when the volume is changed to 1.03 L?