**6.1 – Gas Laws and Ideal Gas Law Problems**

1. You have a gas at a pressure of 5 atm and a temperature of 300 K, what is the new pressure if the temperature is decreased to 200 K?

2. You heat up a pop can to 373 K and it is at a pressure of 1 atm, what is the new pressure of the pop can if you suddenly drop the temperature to 273 K?

3. If you have a balloon that is at 2 atm and 100 K, what pressure did it start at if the temperature initially was 400 K?

4. 1000 mL of a gas at standard temperature and pressure is compressed to 500 mL. What is the new pressure of the gas?

5. You have a gas that initially has a pressure of 5 atm and a volume of 5 L. You then compress this gas to a volume of 10 L. What is the new pressure of this gas?

6. 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 of the balloon when it is fully cooled by my refrigerator?

7. Atmospheric pressure on the peak of Mt. Everest can be as low as 150 mm Hg, which is why climbers need to bring oxygen tanks for the last part of the climb. If the climbers carry 10.0 liter tanks with an internal gas pressure of 3.04 x 104 mm Hg, what will be the volume of the gas when it is released from the tanks?

8. 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 mL bag at a temperature of 19 0C, and I leave it in my car, which has a temperature of 600 C, what will the new volume of the bag be?

9.If four moles of a gas at a pressure of 5.4 atmospheres have a volume of 120 liters, what is the temperature?