Gases Review Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

SOLVE THE PROBLEM:

1. How many moles of chloroform, CHCl3, are required to fill a 253-mL flask at 100.0°C and 940 mmHg?
2. You want the pressure inside a bottle to be 75.0 kPa at 23°C. At what temperature in Celsius should you seal the bottle when the pressure is 112 kPa?
3. A diver’s lungs hold about 20.0 L of air underwater at a pressure of 875 mm Hg. Assuming he holds his breath and his lungs don’t burst, what will be the volume of air in his lungs at standard pressure on the water’s surface.
4. A soccer ball containing 12.0 mL of gas at 21°C is left outside on a cold, winter day. What is the temperature outside in Celsius if the ball shrunk to 10.5 mL?
5. What pressure is required to compress a gas that occupies 6500 L at 25°C and 1.0 atm to a volume of 40.0 L at 18°C?
6. When a canning jar is sealed at 100°C the pressure inside is 101.3 kPa. What is the pressure inside the jar when it cools to room temperature, about 21°C?
7. What is the temperature of a 0.00893 mol sample of neon gas that has a volume of 0.302 L and a pressure of 0.941 atm?
8. A gas occupies 4.78 L at 78.1 kPa and 25°C. What will the volume be at 97.5 kPa and 15°C?
9. A shampoo bottle contains 443 mL of air at 65°C. What is its volume when it cools to 22°C?
10. A balloon is filled with helium to a volume of 12.5 liters at 25°C and 101 kPa. How many grams of helium are in the balloon?
11. A sample of propane has a volume of 250.0 L at 125 kPa and 38°C. What volume will this sample have at 100.0 kPa and 95°C?
12. The pressure in a can of hairspray is 2.50 atm at 298 K. What is the pressure in the can when it is heated to 398 K?