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*Chemistry II Worksheet
Gas Laws Review & Practice*

INSTRUCTIONS: These problems cover most, if not all, of the gas laws we've covered so far. Use your notes. Use your calculator. Use your Periodic Table, yellow Card™, and even your textbook (for all the help it'll be). Just be sure to do these *on your own*. Show your work, keep it neat,

1. The volume of gas at 99.0 kPa is 300.0 mL. If the pressure is increased to 188 kPa, what will be the new volume?
2. The pressure of a sample of helium in a 1.00 L container is 0.988 atm. What is the new pressure if the sample is placed in a 2.00 L container?
3. Air trapped in a cylinder fitted with pistons occupies 145.7 mL at 1.08 atm of pressure. What is the new volume of air when the pressure is increased to 1.43 atm by applying force to the piston?
4. If it takes 0.0500 L of oxygen gas kept in a cylinder under pressure to fill an evacuated 4.00 L reaction vessel in which the pressure is 0.980 atm, what was the initial pressure of the gas in the cylinder?
5. A sample of neon gas occupies 0.220 L at 0.860 atm. What will be its volume at 29.2 kPa pressure?
6. A gas at 89 °C occupies a volume a volume of 0.67 L. At what Celsius temperature will the volume increase to 1.12 L?

7. The Celsius temperature of the a 3.00 L sample of gas is lowered from 80.0 °C to 30.0° C. What will be the resulting volume of this gas?

8. What is the volume of the air in a balloon that occupies 0.620 L at 25.0°C if the temperature is lowered to 0.00°C?

9. A gas in a sealed container has a pressure of 125 kPa at a temperature of 30.0°C. If the pressure in the container is increased to 201 kPa, what is the new temperature?

10. The pressure in an automobile tire is 1.88 atm at 25.0°C. What will be the pressure if the temperature warms up tp 37.0°C?

11. Helium gas in a 2.00 L cylinder is under 1.12 atm of pressure. At 36.5°C, that same gas sample has a pressure of 2.56 atm. What was the initial temperature of the gas in the cylinder?

12. If a gas sample has a pressure of 30.74 kPa at 0.00°C, by how much does the temperature have to **decrease** to lower the pressure to 28.4 kPa?

13. A rigid plastic container holds 1.00 L of methane gas at 660 torr pressure when the temperature is 22.0°C. How much **more** pressure will the gas exert if the temperature is raised to 44.6°C?