

Name _____

Period _____ Date _____

Gas Laws Review

(Boyle's, Charles', Avogadro's, Ideal)

Instructions: for each of the problems below provide the following: the name of the gas law used, show numbers in the formula, and write the answer (sig. figs, and units) in the box provided

1. What volume would be occupied by 100. g of oxygen gas at a pressure of 1.50 atm and a temperature of 25.0 °C?

Law: _____

Work:

Ans:

2. An air-filled balloon has a volume of 225 L at 0.940 atm and 25.0 °C. Soon after the pressure changes to 0.990 atm and the temperature changes to 0.0 °C. What is the new volume of the balloon?

Law: _____

Work:

Ans:

3. If 3.25 L of a gas is at 16.5 psi, what pressure is required to reduce the volume to 175 mL?

Law: _____

Work:

Ans:

4. If 12.5 g of carbon dioxide has a volume of 3.50 L, what volume will 34.0 g occupy at the same T & P?

Law: _____

Work:

Ans:

5. A gas confined in a 515 cm^3 container exerts a pressure of 107 kPa at 138°C . At what Celsius temperature will it exert a pressure of 235 kPa if it is placed into a 644 cm^3 container?

Law: _____

Work:

6. A sample of gas is at constant pressure. At $30.^\circ\text{C}$ the volume is 3.8 L . What volume will this sample occupy at $60.^\circ\text{C}$?

Law: _____

Work:

Ans:

7. A balloon is inflated with 0.2494 g of helium to a pressure of 1.26 atm . If the desired volume of the balloon is 1.250 L , what must the temperature be in $^\circ\text{C}$?

Law: _____

Work:

Ans:

8. A welder's acetylene tank has a volume of 75.0 L . It is stored at a temperature of 23°C and has a pressure of 7660 kPa . How many moles of acetylene are in the tank?

Law: _____

Work:

Ans:

9. How many grams of argon would it take to fill a light bulb with a volume of 0.475 L at STP?

Law: _____

Work:

Ans:

10. What pressure is exerted by 0.625 mole of a gas in a 45.4 L container at -24.0°C ?

Law: _____

Work:

Ans: