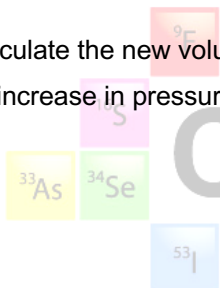


## AP WORKSHEET 03DEF: Gas Laws I

In Questions 1 through 3 the temperature and the amount of gas are both constant.

1. Which gas law relates volume and pressure? Express the law mathematically? (2)
  
2. Calculate the new pressure if a 2.45 L of a gas at a pressure of 1.01 atm is contracted to a volume of 2.29 L. (1)
  
3. Calculate the new volume if a 13.3 L of a gas initially at a pressure of 2.51 atm is subjected to an increase in pressure equivalent to 65.0 mmHg. (2)



Chemistry Pages

In Questions 4 through 6 the pressure and the amount of gas are both constant.

4. Which gas law can relates volume and temperature? Express the law mathematically. (2)
5. Calculate the new volume of a particular gas if 1.23 L of it, initially at a temperature of 32.0 °C is subjected to a drop in temperature of 19.0 degrees Celsius. (1)
6. Calculate the new volume of a gas if a 12.78 L of it, initially at a temperature of –50.00 °C is heated to a temperature of 28.00 °C. (1)

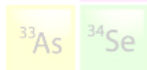


**In Questions 7 and 8, the pressure and temperature of gas are both constant.**

7. Which gas law can relates volume and number of moles? Express the law mathematically. (2)
8. What mass of nitrogen occupies a volume of 11.2 L, if 4.20 g of nitrogen occupies 100. L? (2)

**In questions 9 and 10, assume the gas behaves ideally.**

9. A sample of a group 1 bromide weighing 2.000 g was converted to a gas at 504.0 °C and 1.000 atm pressure. The resulting vapor occupied a volume of 1238 mL. Identify the group 1 metal present in the compound. (3)  $R = 0.0821 \text{ (atm L K}^{-1} \text{ mol}^{-1}\text{)}$



Chemistry Pages

10. What volume does 1.24 g of fluorine gas occupy under conditions of 5.20 °C and 2.04 atm? (1)