

The Ideal Gas Law

Name: _____

1) Calculate the universal gas constant (R) for 1 mole of NO, occupying 22.4 L of volume at standard temperature and pressure.

2) What is the volume occupied by 0.005 moles of an ideal gas under 1.32 atm of pressure and at a temperature of 300 °C?

3) How many moles of chloroform, CHCl₃, are required to fill a 100 ml flask at 373 K and a pressure of 1.25 atm?

4) At what pressure will a 6.70 moles sample of nitrogen gas be in a 300 L tank at 250 K?

5) What temperature is a 0.375 moles sample of oxygen gas at when it is in a 7800 mL tank at 1.7 atm?

6) If 14.8 moles of argon gas are in a 400 L balloon at 36 °C, what is the pressure inside the balloon?

7) 1.5 moles of chlorine gas is in a 3.0 L container at a pressure of 1200 kPa. What is the temperature of the gas?

8) A sample of CO₂ gas in a syringe at a pressure of 750 mmHg has a volume of 30 mL at 19 °C. How many moles of CO₂ are in the syringe?

Answers: 2) 0.178 L

3) 0.0041 moles

5) 431 K

8) 0.00123 moles