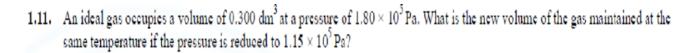
CHM 241 (14410) Excercise



Solution:

Given: Ideal Gas: $V_1 = 0.300 \text{ dm}^3$, $P_1 = 1.80 \times 10^5 \text{ Pa}$

Required: V,

1.12. If the gas in Problem 1.11 were initially at 330 K, what will be the final volume if the temperature were raised to 550 K at constant pressure?

Solution:

Given: same gas as in problem 1.11: $V_1 = 0.300 \text{ dm}^3$

 $T_1 = 330 \text{ K}, T_2 = 550 \text{ K} \text{ (constant pressure)}$

Required: V2

1.16. A gas that behaves ideally has a density of 1.92 g dm ³ at 150 kPa and 298 K. What is the molar mass of the sample? **Solution**:

Given: Ideal Gas: $\rho=1.92~{\rm g~dm^{-3}}, P=150~{\rm kPa}, T=298~{\rm K}$

Required: M____

1.17. The density of air at 101.325 kPa and 298.15 K is 1.159 g dm⁻³. Assuming that air behaves as an ideal gas, calculate its molar mass.

Given: Air: $\rho = 1.159 \text{ g dm}^{-3}$, T = 298.15 K, P = 101.325 kPa

Required: M_{air}