Tutorial 11

PHY 101

Q1. One mole of a gas is contained in a cube of side 0.2m If these molecules, each of mass 5 $\times 10^{-26}$kg, move with translational speed 483ms^{-1} , calculate the pressure exerted by the gas on the sides of the cube.

Q2. A gas is at temperature 80°C and pressure 5 $\times 10^{-10}$N m^{-2}. What is the number of molecules per m^3 if Boltzmann's constant is 1.38 $\times 10^{-23}$ J K^{-1}.

Q3. If a mixture of n_1 moles of monatomic gas and n_2 moles of diatomic gas has γ =1.5, then what will be the ratio of n_1 and n_2?