Physics 301: Problems #7
Oct. 4, 2019

1. Gases A,B are in separate containers with pressures in the ratio $p_B/p_A = 1/6$ and temperatures in the ratio $T_B/T_A = 2$. If the mean free path for gas B is three times that of A, what is the ratio of the molecular diameters?

2. Find the frequency of oscillation for the ball in Richard's experiment in terms of the radius of the ball r_0, the density of the ball ρ, the volume of the gas V, the ambient pressure P, and the adiabatic coefficient of the gas γ.