

PHYS 2401

Assignment 3

Due October 7th

There are 6 problems, each worth 10.

Problems assigned from Concepts in Thermal Physics by Blundell and Blundell

6.5, 7.1, 7.4, 8.1, 8.2

The number density of a diffuse cloud of hydrogen in space is 1 molecule per cubic cm. If each molecule has a diameter of 10^{-10} m and the temperature in interstellar space is 10K

a) estimate the mean free path

b) estimate the collision frequency