

Homework 6, PHY 7500, Fall 2008 (due October 23, 2008)

1. (7.2) Consider an ideal Bose gas. Find the first three virial coefficients.
2. Consider an ideal Bose gas confined to a region of area A in two dimensions. Express the number of particles in the ground state and the number of particles in the excited states in terms of z , T , and A . Show that the system does not exhibit Bose-Einstein condensation.
3. Estimate the temperature of the sun side of the Moon.