**ASTR 311 STELLAR ASTROPHYSICS**
**Problem Set #7**
**(due 14 November 2011)**

1) LeBlanc Problem #6.1

2) LeBlanc Problem #6.2

3) LeBlanc Problem #6.5 (hint: use the appendices)

4) LeBlanc Problem #6.6 (hint: use the appendices)

5) (a) Assume a Maxwellian distribution, and assume that 2 protons with speeds greater than 10 times the rms speed can overcome the Coulomb barrier (neglecting quantum mechanical tunneling). Equate the Coulomb potential energy with the thermal energy and kinetic energy to (a) estimate the minimum temperature (i.e. the rms temperature of the Maxwellian) for fusion to occur. Compare this with the central temperature of the Sun. (c) In a sentence or two, discuss the implications of your result.