PROBLEM SET 6

Reading: Chapter 7 (sections 7.1–7.10) in Reif.

Problems:

1. Reif 7.1

2. Reif 7.2

3. Reif 7.3

4. Reif 7.5

5. Reif 7.7

6. Reif 7.14

7. In class (see notes for lecture 10) we considered a system of N noninteracting spins at temperature T in an external magnetic field H pointing along the z axis. These spins have total angular momentum $J = 1/2$ and $g = 2$. What is the entropy S of the system as a function of T and H?