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 \( J = \frac{1}{2} \) and \( g = 2 \). What is the entropy \( S \) of the system as a function of \( T \) and \( H \)?