

## Problem 1.

This problem is similar to Figs 11-4 and 11-8 but with 5 particles with energy  $5\epsilon$

(a)

Consider a system of 5 particles obeying Bose-Einstein statistics. The energy levels are equally spaced and have a degeneracy  $g_j = 3$  at each level. The total energy of the system is  $5\epsilon$ . Construct the table similar to Fig. 11-4 (find  $\mathcal{W}_k$  for each possible macrostate and calculate the average occupation number for each level).

(b)

Consider a system of 5 particles obeying Maxwell-Boltzmann statistics. The energy levels are equally spaced and have a degeneracy  $g_j = 3$  at each level. The total energy of the system is  $5\epsilon$ . Construct the table similar to Fig. 11-8 (find  $\mathcal{W}_k$  for each possible macrostate and calculate the average occupation number for each level).

## Problem 2.

This problem is similar to Fig. 11-6 but with 7 particles with energy  $7\epsilon$

Consider a system of 7 particles obeying Fermi-Dirac statistics. The energy levels are equally spaced and have a degeneracy  $g_j = 3$  at each level. The total energy of the system is  $7\epsilon$ . Construct the table similar to Fig. 11-6 (find  $\mathcal{W}_k$  for each possible macrostate and calculate the average occupation number for each level).