

Problem 1

Problem 6.2 from your textbook.

Problem 2

Problem 6.7 from your textbook.

Problem 3

Problem 6.24 from your textbook.

Problem 4

You would like to check the validity of the statement after Equation (6.2.14) by comparing numerically the sums in Equations (6.2.14) and (6.2.15) for a simple case. Assume that you are dealing with a system which has only three energy levels at 1, 2 and 3 energy units. Assume  $\beta = 0.1$  (energy unit)<sup>-1</sup> and the chemical potential of the system is 0 energy unit. Since you can not carry out the infinite sum, you will plot the result from the two equations as a function of the upper limit of the sum and you show that as you increase this limit the two sums approach the same value.