

HW 5

Chapter 6

Complete the following problems from your book.

1. 6.5
2. 6.16
3. 6.38
4. 6.39
5. 6.41[†]

6. If the particles in an ideal gas are *relativistic*, then their energy is $E = \sqrt{m^2c^4 + p^2c^2} \approx pc$. Find the partition function, average energy U , and pressure P for this gas.

†: Bonus problem worth 100% of a normal problem