Phys 404
Spring 2010
Homework 7, CHAPTERS 4 and 5
Due Thursday, March 31, 2010 @ 12:30 PM

Chapter 4 assignment:

Read chapter 4, then do

1. K+K, Chapter 4, Problem 8

2. K+K, Chapter 4, Problem 11 (First part only)

3. K+K, Chapter 4, Problem 12

4. K+K, Chapter 4, Problem 18

Chapter 5 assignment:

Read chapter 5, then do

5. K+K, Chapter 5, Problem 1   Hint: Assume that the gas rotates with the centrifuge, as it will if there is any interaction coupling the gas molecules to each other and the walls. If these interactions are weak, you may use the internal chemical potential for an ideal gas. In the rotating frame, there is a fictitious force, which leads to an effective potential energy which depends on r and ω.

6. K+K, Chapter 5, Problem 2

7. K+K, Chapter 5, Problem 4   Hint: Use the factor of 10^4 in the second line of the problem as a given.