Department of Physics, University of Maryland, College Park, MD 20742-4111

Physics 404 **HOMEWORK ASSIGNMENT #7** **Spring 2008**

Due date: Tuesday, April 1 **Deadline:** Thursday, April 3

Feedback suggests that most students prefer the Thursday deadline routine.

B means a problem in Blundell & Blundell's text; GT means a problem in Gould & Tobochnik.

1. B 16.2

2. B 16.4

3. B 16.6 & 16.7, counts as one problem. Start with Eq. 16.82 and use the relation between C_P and C_V for an ideal gas. Note the similarity to GT 2.21 (GT, p. 71).
   Bonus point for doing the problem with *n* moles rather than just 1.

4. B 17.2

5. B 17.3 When expanding, use $\ln(1 \pm x) \approx \pm x - x^2/2$; omitting the second term gives an answer that is off by a factor of 2.

Regarding the idea of availability, you might find the last part of §2.21 of GT to be enlightening. Also take a look at GT 2.24 (not assigned). (Translations of GT's notation to B's: $E \rightarrow U$, $_{bath} \rightarrow {}_0$