Physics 224

Fall 2002

**Discoveries and Inventions of Modern Physics** 

due 11:00 am Tuesday Nov. 5

## **PROBLEM SET 5**

Oct. 31 Colloquium: "The Search for Power Laws: Jamming in Foams"Prof. Michael Dennin, UCI3:30 pm, 101 Rowland Hall

- 1. Eisberg and Resnick problem 11.19.
- 2. Eisberg and Resnick problem 11.20.
- 3. Eisberg and Resnick problem 12.21.
- 4. Eisberg and Resnick problem 12.22(a).
- 5. How does the transition temperature  $T_C$  depend on the number of particles N if E=pc for Bose condensation? (Hint:You don't have to evaluate any integrals. Just try scaling, i.e., make the variables in the integral dimensionless. Your answer should be of the form  $T_C \sim N^{\alpha}$ . Find  $\alpha$ .)