

# Problem Set #13

## Physics 436

Friday, 29 April 2022

The following problems come from Schroeder's *An Introduction to Thermal Physics*:

- Problem 7.22 on page 276 (*10 points*)  $\Rightarrow$  In this problem, you look at an ultra-relativistic degenerate electron gas.
- Problem 7.43 on page 295 (*30 points*)  $\Rightarrow$  For part (b), make a graph of *superior* quality. Use  $0 \text{ eV} \leq \epsilon \leq 6 \text{ eV}$  for the energy range. The spectrum has units of inverse volume. For your vertical scale, use units of inverse cubic microns. Use computer shading to illustrate the portion of the graph corresponding to the visible spectrum. Make sure your part (c) result is reasonable after looking at your part (b) graph.

Due date: **Friday, 06 May 2022**