Lecture 27 — The Planck Distribution
Chapter 8, Friday March 21st

- Quick review of exam 2
- Black-body radiation
- Before Planck: Wien and Rayleigh-Jeans
- The ultraviolet catastrophe
- The Planck distribution

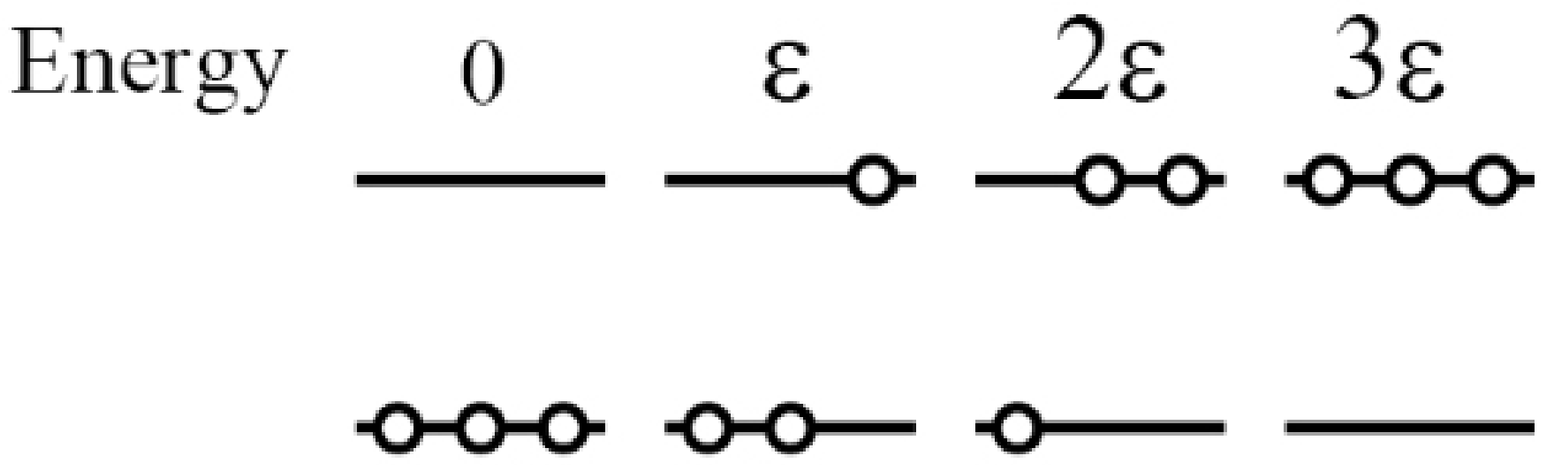
Reading: All of chapter 8 (pages 161 - 186)
Homework 8 not due until Mon. Mar. 31st
Assignment will be handed out on Monday

Exam 2 – question 1

$$\varepsilon\left(n_1, n_2, n_3\right) = \hbar\omega\left(3/2 + n_1 + n_2 + n_3\right)$$

$\varepsilon/\hbar\omega$	$\sum_i n_i$	$(n_1 n_2 n_3)$	Degeneracy
3/2	0	(000)	1
5/2	1	(100)	3
7/2	2	(110) (200)	3 + 3 = 6
9/2	3	(210) (300) (111)	6 + 3 + 1 = 10
11/2	4	(220) (400) (310) (211)	3 + 3 + 6 + 3 = 15

Exam 2 – question 2



g_B	1	1	1	1
g_C	1	3	3	1