Physics 8.322, Spring 2003
Homework #10

Due **Wednesday, April 30** by 4:00 PM in the 8.322 homework box in 4-339B.

1. Sakurai: Problem 2, Chapter 7 (page 441)

2. In class we used the formula

$$e^{ikz} = \sum_l a_l \; j_l(kr) \; P_l(\cos\theta)$$

(a) Calculate a_l

(b) Assume

$$\langle \mathbf{p}|E, l, m\rangle = g_{lE}(p) Y_{lm}(\widehat{\mathbf{p}})$$

and use part (a) to calculate $g_{lE}\ (p)$

3. Sakurai: Problem 3, Chapter 7 (page 442)

4. Sakurai: Problem 4, Chapter 7 (page 442)

5. Sakurai: Problem 7, Chapter 7 (page 443)