

# PY 452: Quantum Physics II Problem Set 11

Due date: **Wednesday**, December 8 by 5:00pm

**Reading:** We should finish the discussion of scattering theory by Thursday of this week. Please complete reading chapter 11 of the text. I will then spend a short time discussing some of the material in chapter 12.

**Notes:** I will be leaving Boston in the early afternoon of Dec. 2 for a conference at Indiana University and will return Sunday evening Dec. 5. My office hours on Friday Dec. 3 are cancelled, but I'll hold office hours from 2:15-3:30 on Monday Dec. 6.

The final exam is scheduled for Wednesday Dec. 15 at 9am in PRB 148. I will provide more details about end-of-semester office hours and the exam in about a week's time. In the meantime, the final exam from last year is posted on the course website.

**Problems:** (last one of the semester)

1. Text 11.5. Please note that this problem is closely related to the types of problems given at the end of chapter 2 about finite square-well potentials. This problem is meant as a partial review of this material.
2. Text 11.6. Also investigate the limiting behavior of the phase shifts  $\delta_\ell$  in the low-energy and high-energy limits. Define the meaning of these two limits precisely.
3. Text 11.12.
4. Text 11.15.