

Physics 195b
Problem set number 14
Due 2 PM, Thursday, February 6, 2003

Notes about course:

- Homework should be turned in to the TA's mail slot on the first floor of East Bridge.
- Collaboration policy: OK to work together in small groups, and to help with each other's understanding. Best to first give problems a good try by yourself. Don't just copy someone else's work – whatever you turn in should be what you think you understand.
- There is a web page for this course, which should be referred to for the most up-to-date information. The URL:
<http://www.hep.caltech.edu/~fcp/ph195/>
- TA: Anura Abeyesinghe, anura@caltech.edu
- If you think a problem is completely trivial (and hence a waste of your time), you don't have to do it. Just write “trivial” where your solution would go, and you will get credit for it. Of course, this means you are volunteering to help the rest of the class understand it, if they don't find it so simple. . .

READING: Finish reading the “Approximate Methods” course note.

PROBLEMS:

66. Variational computation: Do exercise 2 of the Approximate Methods course note.
67. WKB and variational calculation of gravity levels: Do exercise 3 of the Approximate Methods course note.
68. Perturbation calculation of relativistic correction in hydrogen: Do exercise 4 of the Approximate Methods course note.
69. Degenerate stationary state perturbation theory, applied to hydrogen in an electric field: Do exercise 5 of the Approximate Methods course note.