

**Phys 3810, Spring 2010**  
**Problem Set #5**

0. Turn this one in separately.

For a “spherical finite square well” of depth 60.0 MeV and radius 4.0 fm, find the energy eigenvalues of the bound states for all possible  $\ell$  and plot the radial wave functions in some form (either  $R_{n\ell}(r)$  or  $r^2 R_{n\ell}(r)^2$ ).

1. *Griffiths*, 4.19

2. *Griffiths*, 4.20

3. *Griffiths*, 4.23

4. *Griffiths*, 4.26

5. *Griffiths*, 4.27

6. *Griffiths*, 4.29

7. *Griffiths*, 4.55