

Physics 451- Fall 2012

Homework #9

Due [Tuesday, Oct 2, by 7pm](#)

Please place your assignment in the “Physics 451” slot across from N373 ESC.
We have help sessions twice a week, in N337 ESC (undergraduate lab):

T Th from 3 to 6 pm

List of problems (from the textbook):

2.27

2.29

2.30

2.31 (except question about equation 2.169)

Hint:

For problem 2.27, solve the problem for even wave function, and for odd wave function separately. Apply the conditions at boundaries for Ψ and for the first derivative of Ψ . When looking for a graphical solution, sketch or print the graphics.

For the problem 2.29, follow the same procedure presented in class and in the textbook for an even wave function, except the solution is now an odd function.

For problem 2.31, use equation 2.156 and find the approximate solution for z when $z_0 \ll 1$, then deduct the value of the energy in terms of V_0 and a .

Next, you need to find a relationship between (V_0, a) for the finite square well and α for the delta function well: use the equality of the area of potential (the integral of the potential in both case should be the same)