

StudentID: _____

PHYS 451 Quantum Mechanics I (Spring 2018)
Quiz #3

Find all bound state energies of a particle moving in the field of an attractive delta-potential,

$$V(x) = -\alpha\delta(x) \quad \alpha > 0.$$

Remember that the wave function must be continuous. The first derivative of the wave function, however, may have a discontinuity at the points of singularity. To determine the magnitude of the jump of the first derivative of the wave function, you may integrate the Schrödinger equation over an infinitely small region that includes the point of singularity.