

PHYS 452: Quantum Mechanics II - Fall 2016
Homework #5, due Thursday November 17 in class

Quantum scattering

1. Problem 11.6 in Griffiths
2. Consider S -wave scattering ($l = 0$) of a particle of mass m from a spherically symmetric attractive potential well:

$$V(r) = \begin{cases} -V_0, & r < R \\ 0, & r > R \end{cases} .$$

Find the phase shift δ_0 and the total cross section σ_{tot} .

3. Problem 11.20 in Griffiths