Physics 4610, Quantum Mechanics   Name _____

Prof. Schroeder

Spring 2020

Problem Set 3

(due Wednesday, January 29, 12:30 pm)

1.   Problem 2.10, page 44.

2.   Problem 2.13, page 49. In part (d), be sure that you go out to sufficiently large x to show the full behavior of each wavefunction.

3.   Problem 2.16, page 56. Also please plot the Hamiltonian matrix using `MatrixPlot`, and explain why it doesn't have the "checkerboard" pattern seen in Figure 2.14.

4.   Problem 2.18, page 56.

5.   Problem 2.23, page 61. For part (e), start by taking the second derivative and displaying the (lengthy) answer, then show that this answer is consistent with the TISE. Don't try to do the whole thing in a single Mathematica instruction.

6.   Problem 2.26, page 62.