HW#6; Due Tues 10/17.

1. Problem 3.22, parts a) and b).

2. Problem A.8, parts (a) through (g) [In appendix A!]

3. Problem A.9, parts (a) and (b).

4. Problem A.25, parts (a), (b) and (c). only.

5. Find the eigenvectors and eigenvalues of the matrix $S_y = \dfrac{\hbar}{2} \begin{pmatrix} 0 & -i\sqrt{2} & 0 \\ i\sqrt{2} & 0 & -i\sqrt{2} \\ 0 & i\sqrt{2} & 0 \end{pmatrix}$.

Hint: you can factor out a constant, but don't forget to multiply all your eigenvalues by that constant. (The eigenvalues should all have an h-bar in them!)