Chem 442: Homework H12 (For Lecture 12)
(only turn in **BOLD** assignment first lecture next week; do all assignments)

1. Problem 2.2 in the book.

**Turn in 2.** Calculate the probability of finding an electron in the one dimensional box, within $L/3$ and $2L/3$, when its in a) the ground state ($n=1$); and b) 1st excited state ($n=2$).

What is the difference that you observe, and what can you infer about the shape of the wavefunction at the two different energy levels?

**Hint:** the way

3. Problem 2.4 in the book. This shows how ‘electron in a box’ wavefunctions can be applied to calculate energy levels of a conjugated molecule like carotene. We’ll talk about benzene and other such moelcules later.