Mathematics 550 Homework #1

Review some of the basics of vectors in space. Either by looking at your old calculus book or by hunting down the facts you need in the our text. On Wednesday we will have a quiz that will cover the following:

1. Adding and subtracting vectors and multiplying them by scalars.
2. The length $\|\mathbf{a}\|$ of a vector $\|\mathbf{a}\|$.
3. Computing the dot product between vectors.
4. The geometric meaning of the dot product. That is if $\mathbf{a}$ and $\mathbf{b}$ are vectors then $\mathbf{a} \cdot \mathbf{b} = \|\mathbf{a}\|\|\mathbf{b}\| \cos \theta$ where θ is the angle between $\mathbf{a}$ and $\mathbf{b}$. (Note this lets you compute the angle between $\mathbf{a}$ and $\mathbf{b}$.)

So as to not be absolutely unreasonable you can ask me questions before the quiz is passed out.