**ENGR 2011: Engineering Analysis and Applications**

**Homework No. 12: Vector Spaces and Linear Transformations**

**Goal:** Demonstrate that you understand the basic properties of a vector space and a linear transformation.

**Textbook Problems:** 6.1.1, 6.3.1, 6.5.2, 7.1.1(a-c), 7.2.20, 7.3.1(a-c)

**Computer Problems:** Use Python as necessary to confirm the above results. For problems that are abstract, try running some specific cases to prove/disprove your results. For example, if a transformation is nonlinear, you just need to show one numeric case where the results demonstrate nonlinearity.