Homework Assignment # 1
DUE: Friday, January 30th, at the *beginning* of class

From our text:

- Section 1.1: # 2, 5, 6, 8, 12.
- Section 1.2: # 1, 3cdik, 4, 12, 14, 15.

From other sources:

- Subspaces are subsets and so we naturally consider how "is a subspace of" interacts with the usual set operations. Let V be a vector space, and suppose W and U are subspaces of V. Then we know from Theorem (1.2.13) that $W \cap U$ is a subspace of V. Along these lines...

  1. Must $A \cup B$ be a subspace? (Always? Sometimes? Never?)
  2. If A is a subspace, must its complement A^c be a subspace? (Always? Sometimes? Never?)

     (*Hint:* Try some test subspaces from the other problems, and/or the examples in our book.)