Carefully justify every answer.

Exercise 1 (Two.I.1.13)

In a vector space every element has an additive inverse. Can some elements have two or more?

. . . . . .

Exercise 2 (Two.I.2.44)

Show that if a vector is in the span of a set then adding that vector to the set won't make the span any bigger.

. . . . . .

Exercise 3 (Two.I.2.48)

If $S \subseteq T$ are subsets of a vector space, is $[S] \subseteq [T]$?

. . . . . .

Exercise 4 (Two.III.2.15)

Find a basis for, and the dimension of, $\mathcal{P}_2$. (See Example 1.8 on p. 88.)

. . . . . .

Exercise 5

Look through the Exercise sections from the parts of Chapter Two we have covered (p. 84-135). List any that you would like for me to go over in class.

. . . . . .