MATH 306 Workshop

1. What properties must a **field F** satisfy?

2. Definition of $\mathbf{F}^n$?

3. Explain the following rules in $\mathbf{F}^n$

    a. "+" in $\mathbf{F}^n$:

    b. "0" in $\mathbf{F}^n$:

    c. Additive inverse:

    d. Scalar multiplication:

4. Show that $(\alpha + \beta) + \lambda = \alpha + (\beta + \lambda)$ for all $\alpha, \beta, \lambda \in \mathbb{C}$.

5. Show that $(ab)x = a(bx)$ for all $x \in \mathbb{F}^n$ and all $a, b \in \mathbb{F}$.

6. Properties of a **vector space**:

7. Give some examples of vector spaces and explain why we consider each as a vector space.

8. Show that if $v \in V$, then the additive inverse of v is unique. (try not to look at notes)

Know the following proving techniques
   1. Proving uniqueness
   2. Proving "for all" statements
   3. Proving biconditional statements