

Worksheet 2

Due: Tuesday, January 27

Put full names of group members at the top in alphabetical order by first name. Of the people whose first name does not start with A, B, or C, pick the person whose first name is first in alphabetical order. That person writes the worksheet.

Do the following problems *without* looking at the book. I've given a statement about a vector space V over \mathbb{F} and provided the key step in the proof. Write the full proof.

1. " $\forall v \in V, 0 \cdot v = 0$." Key step: use $0 = 0 + 0$ (these are scalars).

2. " $\forall a \in \mathbb{F}, a \cdot 0 = 0$." ($0 \in V$). Key step: use $0 = 0 + 0$ (these are vectors).

3. " $\forall v \in V, (-1)v = -v$." Key step: add v and $(-1)v$ together.