Addition of subspaces of V has an additive identity.

For an arbitrary subspace $\mathcal{U}$ of V:

$$\mathcal{U} = \{(x_1, \dots, x_n) \in F^n : x_i \in F\}$$

Let 0 be the smallest subspace of V (The set $\{0\}$)

$$0 = \{(0, \dots, 0) \in F^n\}$$

$$\begin{aligned} \mathcal{U} + 0 &= \{(x_1 + 0, \dots, x_n + 0) \in F^n\} \\ &= \{(x_1, \dots x_n) \in F^n\} \\ &= \mathcal{U} \end{aligned}$$

Let W be an additive inverse of $\mathcal{U}$.

$$\left.\begin{aligned} \mathcal{U} + W &= \{0\} \\ \mathcal{U} &\subseteq \mathcal{U} + W \end{aligned}\right\} \Rightarrow \mathcal{U} \subseteq \{0\} \Rightarrow \mathcal{U} = \{0\}.$$

Analogous, $W = \{0\}$.

Only the 0 subspace has an additive inverse (itself)