Homework 5

1.) $-v+v = (-1+1)v = 0v \to$ by Commutativity

So $-1v$ is the additive inverse

2.) $a \in F$ & $v \in V$

$av = 0$

$a = 0$

$av = 0 \cdot v = 0$

Case 2 $a \neq 0$

$av = 0$

$a^{-1}(av) = a^{-1} \cdot 0$

$(a^{-1}a)v = a^{-1} \cdot 0$

$v = 0$

3.) $v(1+\lambda) = 0$

only possible if

$1+\lambda = 0$

$\lambda = -1$

but $-1 \notin F$

Or if $v = 0$

$0(1+\lambda) = 0$

$0 = 0$