

Chapter 3 - Section F

Mostafa Touny

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Exercises

Ex. 01

Assume φ is not the zero map. Then for some vector v_0 , $\varphi(v_0) = \lambda_0 \neq 0$. Let $\lambda \in F$ be arbitrary. Then by linearity $\varphi(\lambda \cdot (\lambda_0)^{-1}v_0) = \lambda(\lambda_0)^{-1}\lambda_0 = \lambda$. Hence surjective.