

Fall 2022 MATH1205H Homework XXV

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Exercise 1.

If L is not the zero function,

$$\exists v \in V : L(v) \neq 0$$

So

$$\forall x \in \mathbb{R} : x = \frac{x}{L(v)} L(v) = L\left(\frac{x}{L(v)} v\right)$$

Therefore, L is surjective.

Exercise 2.