

A PROOF EVALUATION EXERCISE IN AN INTRODUCTORY LINEAR ALGEBRA COURSE

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In a first year university linear algebra course, students were presented with five purported proofs of the statement that a linear transformation of \mathbb{R}^2 must fix the origin. The students were familiar with the definition of a linear transformation as an additive function that respects scalar multiplication, and with the matrix representation of a linear transformation of \mathbb{R}^2 . They were asked to consider each argument and decide on its correctness. They were also asked to rank the five “proofs” in order of preference and to comment on their rankings. We discuss our students’ assessments of the five presented arguments. It will be suggested that exercises of this nature can give us some useful understanding of our students’ thinking about the mechanisms of proof and (in this instance) about essential concepts of linear algebra.