

Math 416 - Abstract Linear Algebra
Fall 2011, section E13
Additional problems

Section 1.4

A4.1 Find a basis of the space $\mathcal{L}(\mathbb{R}^2, \mathbb{R}^3)$.

A4.2 Let V, W be vector spaces and $v \in V$ some vector. Consider the “evaluation” map

$$\begin{aligned} \text{ev}: \mathcal{L}(V, W) &\rightarrow W \\ T &\mapsto T(v) \end{aligned}$$

which evaluates an input transformation T at the vector v . Is ev a linear transformation? Prove your answer.