(1) Exercises 3, 4, 9(c,d), 14, 17, and 20 in Section 2.1 of [FIS].

(2) Let $V$ be a vector space over $\mathbb{R}$ with $\dim(V) = 1$. Show that if $T : V \to V$ is linear, then there exists a unique $c \in \mathbb{R}$ such that $T(v) = cv$ for every $v \in V$.

* [FIS] = Friedberg, Insel, Spence’s *Linear Algebra* text (4th edition)