MTH 510

Homework 6
Due: Feb. 28, 2019

Chapter 3: 1, 2, 3, 5, 7

Additional homework (suggestion: do this before the book homework):

1. Determine whether each of the following functions are linear maps.

   (a) $T : \mathbb{R} \rightarrow \mathbb{R}$ defined by $T(x) = 3x + 2$.

   (b) $T : \mathbb{R} \rightarrow \mathbb{R}$ defined by $T(x) = \sin x$.

   (c) $T : \mathcal{F} \rightarrow \mathcal{F}$ defined by $T(f(x)) = e^x f(x)$, where $\mathcal{F}$ is the vector space of functions from $\mathbb{R}$ to $\mathbb{R}$.

   (d) $T : \mathbb{F}^n \rightarrow \mathbb{F}^n$ defined by $T(x_1, x_2, \ldots, x_n) = (x_n, x_{n-1}, \ldots, x_1)$. 