

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 $T(x_1, x_2, \dots, x_n) = (x_n, x_{n-1}, \dots, x_1)$.