

MTH 510

Homework 4

Due: Feb. 14, 2019

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

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

1. Which of the following lists of vectors in \mathbb{R}^3 are linearly independent?
 - (a) $((-3, 0, 4), (5, -1, 2), (1, 1, 3))$
 - (b) $((-3, 0, 4), (5, -1, 2), (9, -3, 14))$
 - (c) $((2, -1, 0), (3, 1, 1), (-3, -2, 1), (1, 2, 3))$
 - (d) $((-3, 0, 4), (-6, 0, 8))$
2. Which of the following lists of vectors in $\mathcal{P}(\mathbb{F})$ are linearly independent?
 - (a) $(6 - z^2, 1 + z + 5z^2)$
 - (b) $(6 - z^2, 6 - z^2, 1 + z + 5z^2)$
 - (c) $(3, 1 + 2z, 2 + 5z + z^2)$
3. Which of the lists of vectors in Problem 1 span \mathbb{R}^3 ?
4. Which of the lists of vectors in Problem 2 span $\mathcal{P}_2(\mathbb{F})$?