

## Linear Algebra 2270-2

Due in Week 8

The 7th week starts the work from chapter 4, due in week 8. Here's the list of problems, all of which have book answers except 4.3-34.

**Section 4.1.** Exercises 1, 5, 7, 11, 13, 21, 27

**Section 4.2.** Exercises 3, 5, 11, 15, 23, 31

**Section 4.3.** Exercises 5, 9, 11, 13, 15, 19, 34

**Answer to 4.3-34:** Polynomials 1 and 2 are a potential basis, because polynomial 3 is a linear combination of 1 and 2. Further, polynomials 1 and 2 have span equal to the span of  $1, t$ , succinctly  $\mathbf{span} p_1, p_2 = \mathbf{span} 1, t$ . Because  $1, t$  are independent, then  $p_1, p_2$  are also independent. Then polynomials 1 and 2 form a basis for the span of polynomials 1, 2 and 3.