

## Assignment 4.

Given Oct 20 2000, due Oct 27 2000.

- (1) Do exercises 4 5, 6, 10, 15, 16, 17 from Chap 6. of the textbook.
- (2) In the second part of the proof in Theorem 6.2.4, is it true that  $\mathcal{L}(A_1, A_2, \dots, A_n, \dots) = \mathcal{V}$ ?
- (3) Does the proof of the Basis Extension Theorem work for  $\mathcal{V} = \mathcal{P}(R)$ ? In other words, given linearly independent  $A_1, A_2, \dots, A_m \in \mathcal{V}$ , can you find  $B_1, B_2, \dots, B_n, \dots \in \mathcal{V}$  such that  $\mathcal{L}(A_1, A_2, \dots, A_m, B_1, B_2, \dots, B_n, \dots) = \mathcal{V}$ ? How about  $\mathcal{V} = F([0, 1])$ ?