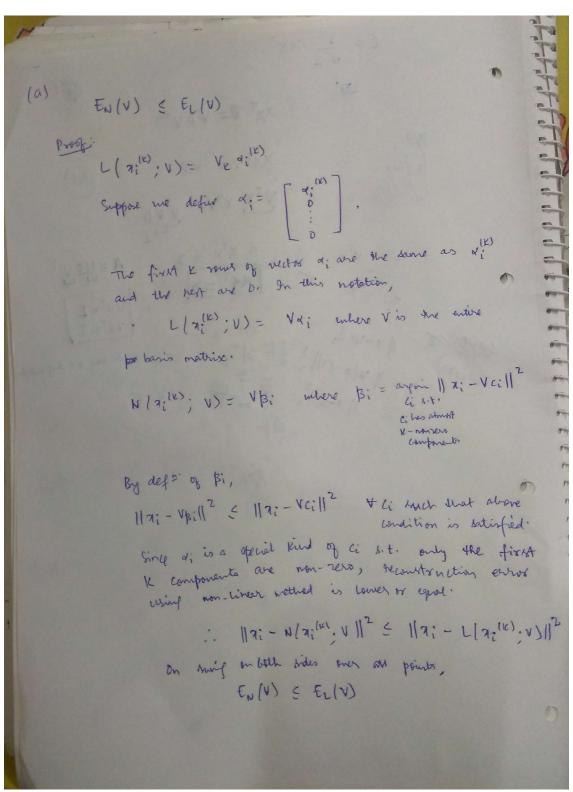
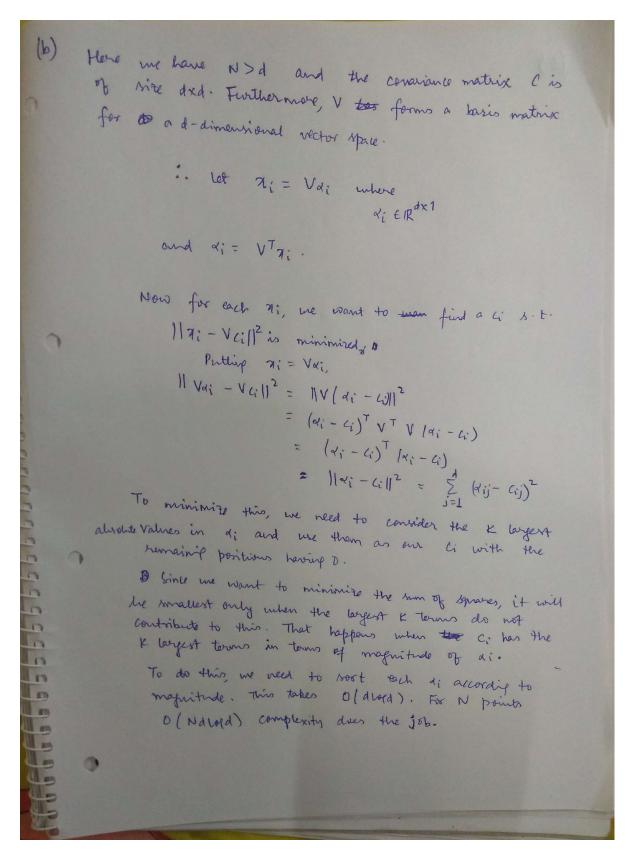
CS663, Assignment 4 Instructor: Prof. Ajit Rajwade

Question 6





(c)

It is possible to construct a W such that $E_N(W) < E_N(V)$. Consider the following scenario.

$$x1 = [-1; 10; 0.3]^T$$

$$x2 = [-0; 12; -1.3]^T$$

$$x3 = [-0.1; -3; 2.12]^T$$

$$x4 = [-0; 2.33; -3.31]^T$$

$$W =$$

$$\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$$

The approximation errors are on doing a degree 1 approximation i.e. $\mathbf{k}=1$:

V	12.939904
W	12.713300

The approximation errors are on doing a degree 2 approximation i.e. $\mathbf{k}=2$:

V	0.287779
W	0.100000

The associated code to test this has been placed in the code folder.