AMATH 352 Homework 5

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Due Friday, July 27

Exercise 1

Olver & Shakiban— 3.3.23a,b — use MATLAB and include your plots

The following exercises should be done by hand, showing all steps.

Exercise 2

Olver & Shakiban— 3.4.2

Exercise 3

Olver & Shakiban— 3.4.7

Exercise 4

Olver & Shakiban— 3.5.2d,f

Exercise 5

Olver & Shakiban— 3.5.10 — Remember tr $\mathbf{K}$ is the sum of the diagonal elements. Hint: $\mathbf{e}_j^T \mathbf{K} \mathbf{e}_j = k_{jj}$ where $\mathbf{e}_j$ is the jth unit vector. Also, for part c) you may assume the matrix is symmetric.

Exercise 6

Olver & Shakiban— 3.5.19a,c

Exercise 7

Olver & Shakiban— 4.1.1

Exercise 8

Olver & Shakiban— 4.3.15a,c,e — you may use MATLAB for part e