

Numerical Linear Algebra - Sheet 2

to be handed in until November 01, 2022, 11am.

Problem 1. Problem 1.2.5 in the Lecture Notes.

Problem 2. Problem 1.2.7 in the Lecture Notes.

Problem 3. Compute the eigenvalues and eigenvectors of the matrix

$$\begin{bmatrix} \cos(\alpha) & \sin(\alpha) \\ -\sin(\alpha) & \cos(\alpha) \end{bmatrix},$$

for $\alpha \in \mathbb{R}$.

Problem 4. Show that for normal matrices the left and right eigenvectors for a given eigenvalue coincide.