

Numerical Linear Algebra Assignment 16

Exercise 1. (TreBau Exercise 37.1, 10 points)

Exercise 2. (TreBau Exercise 37.2, 10 points)

Exercise 3. (TreBau Exercise 37.3, 10 points)

Compulsory requirement for programming: Use Matlab's `publish` to save all your code, comments, and results to a PDF file. You must use the programming format files: `example_format.zip`.

Programming 1. (TreBau Exercise 37.4, 10 points)

Programming 2. (TreBau Exercise 37.5, 10 points)

Programming 3. (10 points)

Write Matlab code (implementing Algorithm 37.1) to compute the first six Legendre polynomials ($P_j(x)$, $j = 0, 1, 2, 3, 4, 5$, $P_j(1) = 1$). Hint: you can use Matlab's symbolic toolbox: `sym`, `int` and `subs`.