

## Muhdollisia Esitehtäviä

1. Describe the use of the following commands with a short explanation of the output
  - (a) plot
  - (b) roots
  - (c) poly
  - (d) polyfit
2. Generate 5 random points in the unit square  $[0, 1] \times [0, 1]$  and compute their mutual distances.
3. (a) Explain the use of the program interp1 and list at least three different methods that the user can specify to perform interpolations.  
(b) Given the data  $x = 0:0.1:2$ ;  $y = \sin(x)$ ; compute interpolated values at  $x_i = \pi/12; \pi/2; \pi/2$ .
4. Consider the model  $f(\lambda_1, \lambda_2, x) = \lambda_1 \exp(-\lambda_2 x)$  and a data set  $(x_k, y_k)$ ,  $k = 1, \dots, m$ . Use the algorithm parfit or parfit1 to fit the parameters to this data