Homework 10

1. Find the least squares polynomials of degrees 1 and 2 for the data in the following table.Compute the error in each case. Graph the data and the polynomials.

x_i	0	1	3	5	7	9	12
y_i	10	12	18	15	20	25	36

2. $$A = \begin{pmatrix} 1 & 1 \\ 2 & 3 \\ 0 & 1 \end{pmatrix}, \; b = \begin{pmatrix} 0 \\ 5 \\ 1 \end{pmatrix}$$

   Find the unique least-squares solution x using

   (a) normal equations method;

   (b) QR factorization method;

   (c) Householder method.

Useful material in 'Numerical Liner Algebra and Applications, Cahpter 8 (Reader) Least Squares'