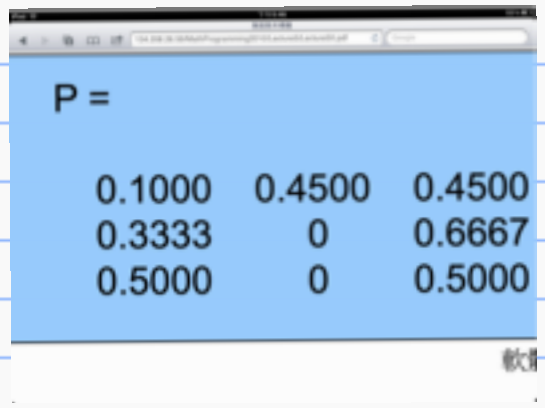
Exercise

1. Let $v_1=(100\ 600\ 300)^T$ and



a. Draw a for-loop flow chart to evaluate v_k

$$v_k = P \cdot v_{k-1}$$

b. v_{10} = ? v_{20} = ? v_{100} = ?

2. Revise your flow chart to force the for-loop break after detecting convergence of v_K

3. x=[-1 0 1 2 3 4]; y=[2 1 4 11 22 37]; a=2; b=1; c=1

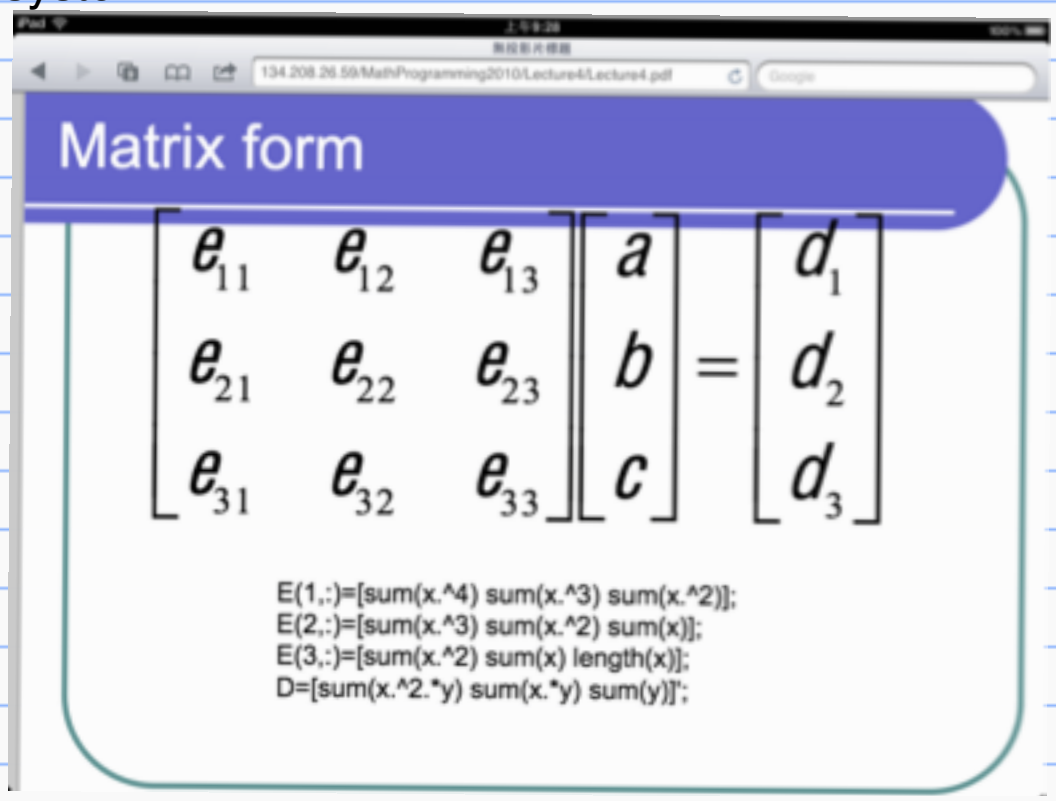
a. e=a*x.^2 + b*x + c - y; mse=mean(e.^2); mse=?

b. Draw a for-loop flow chart to evaluate mse (mean square error).

c. Express mse mathematically

d. Derive normal equations of estimating a, b and c for given x and y.

e. Give vector codes to estimate a, b and c for given x and y. Equivalently solve the following linear system



* f. Draw a for-loop flow chart to estimate a, b and c.

*g. Write a Matlab function to implement your flow chart.