**Part I:**

1. **Power Method:**
2. **.m file(Function Script):**

%Power Method is used to evaluate an approximation for the maximum eigen

%value of a matrix.

%This Function handles the square 2X2 matrix.

%File created by Ahmed M. Hemdan and it's allowable to be edited

function [lamda] = No\_1\_Power\_Method(A,n) % Open the function

X=[1;0]; % Suppose the eigenvector X0

for i=1:n % Define the loop

X=A\*X; % Multiply matrix A by matrix X

lamda=X(1); % Obtain eigenvalue

X=X/X(1); % Prepare for the next X

end % Evaluate Xn

end % Close the function

1. **Function Test(Command Window Entries):**

>> A=[4,-5;2,-3];

>> n=10;

>> [lamda]=No\_1\_Power\_Method(A,n)

lamda =

1.9977

>> eig(A)

ans =

2

-1