**Assignment 3**

**(Vectors and Matrices)**

1. If x=[1 4 11 100], y=[14; 200; -100] & z=[1.4 10.7 -1.1 20.9] try the following commands on each vector:

sum(x), mean(x), max(x), min(x), prod(x), sign(x), fix(x), ceil(x), floor(x), round(x), sort(x).

1. If A=[1 10 20; 2 5 6;7 8 9] construct a sub matrix B having elements of row 2 to 3 and column 1 to 2. Also construct a column vector of middle column.
2. Let matrix A=[1 10 20; 2 5 6; 7 8 9]. Reshape the matrix to a column vector.
3. Let matrix A=[1 2 3 4; 5 6 7 8; 9 10 11 12]. Reshape the matrix into 6x2 matrix.
4. Let A=[6 7; 8 9], x=[1; 2] & y=[3 4]
   1. Append the vector x as new column of A and store in matrix B
   2. Append the vector y as new row of A and store in matrix C
   3. Delete the first or last row from matrix A
   4. Delete the element with indices (1,2) from the matrix A. (Note)
   5. Try B=[A A+10; A-2 A+3]( Concatenation of matrices)
5. Generate special matrix using following functions

Zeros(..),ones(…), eye(…), rand(…), rands(…), diag(…)

1. If A=[1 2;0 4] find det(A), rank(A), trace(A), inv(A), eig(A),
2. If A=[5 10; 15 20] & B=[2 4; 6 8] try the following commands
   1. A+B, A-B, A\*B, A^2, A/B, A\B
   2. A.\*B, A.^2, A./B, A.\B

Note the results of part a and part b

1. Obtain the sum of following series

S=1+r+r2+r3+r4+………..rn for r=2 & n=6.