**Tutorial no -3**

QUES NO 1

>>x=[1 2 3 4]

x =

1 2 3 4

>> y=[5 4 3 2]

y =

5 4 3 2

a) >> [x y]

ans =

1 2 3 4 5 4 3 2

b) >> [sum(x) y]

ans =

10 5 4 3 2

c) >> x.^x

ans =

1 4 27 256

d) >> z=[x.\*y]

z =

5 8 9 8

e) >> sum(z)

ans =

30

f) >> x+y

ans =

6 6 6 6

g) >> x'+y'

ans =

6

6

6

6

h) >>B=[x;y]

B =

1 2 3 4

5 4 3 2

>> B=[1 2 3 4;5 4 3 2]

B =

1 2 3 4

5 4 3 2

i) >>A=[3 2 1 5;5 9 7 6]

A =

3 2 1 5

5 9 7 6

>>A-B

ans =

2 0 -2 1

0 5 4 4

j) >> A.\*B

ans =

3 4 3 20

25 36 21 12

k) x=input('vector C=');

y=input('vector D=');

c=cross(x,y)

d=dot(x,y)

>>Untitled

vector C=[5 3 6;7 6 9;3 6 2]

vector D=[5 8 6;0 9 6;4 5 7]

c =

28 -24 51

-5 33 -30

-35 -21 -18

d =

37 108 104

QUES NO 2

zeros(2,3)

ans =

0 0 0

0 0 0

>> 5\*eye(3,3)

ans =

5 0 0

0 5 0

0 0 5

>> 3\*ones(2,2)

ans =

3 3

3 3

QUES NO 3

>> G=[2 6 0 0 0 0;3 9 0 0 0 0;0 0 1 2 0 0; 0 0 3 4 0 0;0 0 0 0 -5 5;0 0 0 0 5 3]

G =

2 6 0 0 0 0

3 9 0 0 0 0

0 0 1 2 0 0

0 0 3 4 0 0

0 0 0 0 -5 5

0 0 0 0 5 3

a) >> G(:,6)=[]

G =

2 6 0 0 0

3 9 0 0 0

0 0 1 2 0

0 0 3 4 0

0 0 0 0 -5

0 0 0 0 5

>> G(6,:)=[]

G =

2 6 0 0 0

3 9 0 0 0

0 0 1 2 0

0 0 3 4 0

0 0 0 0 -5

b) >> a=G((1:4),(1:4))

a =

2 6 0 0

3 9 0 0

0 0 1 2

0 0 3 4

C) >> G(5,5)=4

G =

2 6 0 0 0

3 9 0 0 0

0 0 1 2 0

0 0 3 4 0

0 0 0 0 4

QUES NO 4

a)>> A=rand(10,10)

A =

0.4229 0.5309 0.7788 0.5181 0.2548 0.9160 0.1759 0.2691 0.6476 0.4587

0.0942 0.6544 0.4235 0.9436 0.2240 0.0012 0.7218 0.7655 0.6790 0.6619

0.5985 0.4076 0.0908 0.6377 0.6678 0.4624 0.4735 0.1887 0.6358 0.7703

0.4709 0.8200 0.2665 0.9577 0.8444 0.4243 0.1527 0.2875 0.9452 0.3502

0.6959 0.7184 0.1537 0.2407 0.3445 0.4609 0.3411 0.0911 0.2089 0.6620

0.6999 0.9686 0.2810 0.6761 0.7805 0.7702 0.6074 0.5762 0.7093 0.4162

0.6385 0.5313 0.4401 0.2891 0.6753 0.3225 0.1917 0.6834 0.2362 0.8419

0.0336 0.3251 0.5271 0.6718 0.0067 0.7847 0.7384 0.5466 0.1194 0.8329

0.0688 0.1056 0.4574 0.6951 0.6022 0.4714 0.2428 0.4257 0.6073 0.2564

0.3196 0.6110 0.8754 0.0680 0.3868 0.0358 0.9174 0.6444 0.4501 0.6135

b)>> B=100\*A

B =

42.2886 53.0864 77.8802 51.8052 25.4790 91.5991 17.5874 26.9062 64.7618 45.8725

9.4229 65.4446 42.3453 94.3623 22.4040 0.1151 72.1758 76.5500 67.9017 66.1945

59.8524 40.7619 9.0823 63.7709 66.7833 46.2449 47.3486 18.8662 63.5787 77.0286

47.0924 81.9981 26.6471 95.7694 84.4392 42.4349 15.2721 28.7498 94.5174 35.0218

69.5949 71.8359 15.3657 24.0707 34.4462 46.0916 34.1125 9.1113 20.8935 66.2010

69.9888 96.8649 28.1005 67.6122 78.0520 77.0160 60.7389 57.6209 70.9282 41.6159

63.8531 53.1334 44.0085 28.9065 67.5332 32.2472 19.1745 68.3363 23.6231 84.1929

3.3604 32.5146 52.7143 67.1808 0.6715 78.4739 73.8427 54.6593 11.9396 83.2917

6.8806 10.5629 45.7424 69.5140 60.2170 47.1357 24.2850 42.5729 60.7304 25.6441

31.9600 61.0959 87.5372 6.7993 38.6771 3.5763 91.7424 64.4443 45.0138 61.3461

>> B=fix(B)

B =

42 53 77 51 25 91 17 26 64 45

9 65 42 94 22 0 72 76 67 66

59 40 9 63 66 46 47 18 63 77

47 81 26 95 84 42 15 28 94 35

69 71 15 24 34 46 34 9 20 66

69 96 28 67 78 77 60 57 70 41

63 53 44 28 67 32 19 68 23 84

3 32 52 67 0 78 73 54 11 83

6 10 45 69 60 47 24 42 60 25

31 61 87 6 38 3 91 64 45 61

c)>> B(B<10)=0

B =

42 53 77 51 25 91 17 26 64 45

0 65 42 94 22 0 72 76 67 66

59 40 0 63 66 46 47 18 63 77

47 81 26 95 84 42 15 28 94 35

69 71 15 24 34 46 34 0 20 66

69 96 28 67 78 77 60 57 70 41

63 53 44 28 67 32 19 68 23 84

0 32 52 67 0 78 73 54 11 83

0 10 45 69 60 47 24 42 60 25

31 61 87 0 38 0 91 64 45 61

d)>> B(B>90)=inf

B =

42 53 77 51 25 Inf 17 26 64 45

0 65 42 Inf 22 0 72 76 67 66

59 40 0 63 66 46 47 18 63 77

47 81 26 Inf 84 42 15 28 Inf 35

69 71 15 24 34 46 34 0 20 66

69 Inf 28 67 78 77 60 57 70 41

63 53 44 28 67 32 19 68 23 84

0 32 52 67 0 78 73 54 11 83

0 10 45 69 60 47 24 42 60 25

31 61 87 0 38 0 Inf 64 45 61

e) >> C=B((30<=B)&(B<=50))

C =

42

47

31

40

32

42

44

45

34

38

46

42

46

32

47

47

34

42

45

45

35

41

QUES NO 5

v=10;

m=1;

s=10;

d=1;

w=(s/m)^(1/2);

t=0:0.02:10;

R=(d.\*cos(w.\*t))+((v./w).\*sin(w.\*t));

R1=(d.\*w.\*sin(w.\*t))+(v.\*cos(w.\*t));

plot(t,R,'o-',t,R1,'r-');

xlabel('Time');

ylabel('Response');

grid on



Ques NO 6

a) clc

t=0:0.5:5;

x=2+(0\*t);

y=3+(10\*t);

z=0+(0\*t);

p=[t;x;y;z];

fprintf('%4s %8s %10s %10s\n','Time','X','Y','Z');

fprintf('%4.1f %8.0f %10.0f %10.0f\n',p);

Time X Y Z

0.0 2 3 0

0.5 2 8 0

1.0 2 13 0

1.5 2 18 0

2.0 2 23 0

2.5 2 28 0

3.0 2 33 0

3.5 2 38 0

4.0 2 43 0

4.5 2 48 0

5.0 2 53 0

b) t=0:0.5:5;

x=2+(0\*t);

y=3+(10\*t);

z=0+(0\*t);

n=length(t);

r=[t(n);x(n);y(n);z(n)];

fprintf('%4s %8s %10s %10s\n','Time','X','Y','Z');

fprintf('%4.1f %8.0f %10.0f %10.0f\n',r);

>> Untitled5

Time X Y Z

5.0 2 53 0