MATLAB1001

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REGISTRATION NO.-19BCD7143

SLOT-L19 L20

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```
>> a=1

a =

     1

>> b=2

b =

     2

>> c=a+b

c =

     3

>> d=cos(a)

d =

    0.5403

>> e=sin(a)

e =

    0.8415
```

```
>> e=a*b

e =

    2

>> a=[1 2 3 4]

a =

    1    2    3    4

>> a[123;456;789]
 a[123;456;789]
  ↑
Error: Unbalanced or unexpected parenthesis or bracket.

>> a=[1 2 3;4 5 6;7 8 9]

a =

    1    2    3
    4    5    6
    7    8    9

>> z=zeros(5,1)

z =
```

```
     0
     0
     0
     0
     0

>> a+10

ans =

    11    12    13
    14    15    16
    17    18    19

>> sin(a)

ans =

    0.8415    0.9093    0.1411
   -0.7568   -0.9589   -0.2794
    0.6570    0.9894    0.4121

>> a'

ans =

     1     4     7
     2     5     8
```

```
    3     6     9

>> p=a*inv(a)
Warning: Matrix is close to singular or badly scaled. Results may be inaccurate. RCOND =  2.202823e-18.

p =

    0     1     0
   -4     2     0
   -4     3     2

>> p=a*inv(a)
Warning: Matrix is close to singular or badly scaled. Results may be inaccurate. RCOND =  2.202823e-18.

p =

    0     1     0
   -4     2     0
   -4     3     2

>> inv(a)
Warning: Matrix is close to singular or badly scaled. Results may be inaccurate. RCOND =  2.202823e-18.

ans =

  1.0e+16 *

   0.3153   -0.6305    0.3153
  -0.6305    1.2610   -0.6305
```

```
   0.3153   -0.6305    0.3153


>> p=a*inv(a)
Warning: Matrix is close to singular or badly scaled. Results may be inaccurate. RCOND =  2.202823e-18.


p =


    0     1     0
   -4     2     0
   -4     3     2


>> formatlomg
Undefined function or variable 'formatlomg'.


>> format long
>> p=a*inv(a)
Warning: Matrix is close to singular or badly scaled. Results may be inaccurate. RCOND =  2.202823e-18.


p =


    0     1     0
   -4     2     0
   -4     3     2


>>  a=[1 2 3;4 5 6;7 8 9]


a =


    1     2     3
```

```
    4     5     6
    7     8     9

>> a=[1 2 3;4 5 6;7 8 10]

a =

    1     2     3
    4     5     6
    7     8    10

>> inv(a)

ans =

  -0.666666666666666  -1.333333333333333   1.000000000000000
  -0.666666666666667   3.666666666666666  -1.999999999999999
   1.000000000000000  -2.000000000000000   1.000000000000000

>> p=a*inv(a)

p =

   1.000000000000000  -0.000000000000000  -0.000000000000000
   0.000000000000001   0.999999999999999  -0.000000000000000
   0.000000000000002  -0.000000000000003   1.000000000000000

>> format long
>> p=a*inv(a)
```

```
p =

  1.000000000000000  -0.000000000000000  -0.000000000000000
  0.000000000000001   0.999999999999999  -0.000000000000000
  0.000000000000002  -0.000000000000003   1.000000000000000

>> p=a.*a

p =

    1    4    9
   16   25   36
   49   64  100

>> a.^a

ans =

  1.0e+10 *

  0.000000000100000   0.000000000400000   0.000000002700000
  0.000000025600000   0.000000312500000   0.000004665600000
  0.000082354300000   0.001677721600000   1.000000000000000

>> a.^ a

ans =
```

```
  1.0e+10 *

  0.000000000100000   0.000000000400000   0.000000002700000
  0.000000025600000   0.000000312500000   0.000004665600000
  0.000082354300000   0.001677721600000   1.000000000000000

>> p=a.^a

p =

  1.0e+10 *

  0.000000000100000   0.000000000400000   0.000000002700000
  0.000000025600000   0.000000312500000   0.000004665600000
  0.000082354300000   0.001677721600000   1.000000000000000

>> a,^ a
 a,^ a
   ↑
Error: Unexpected MATLAB operator.

>> a,^a
 a,^a
   ↑
Error: Unexpected MATLAB operator.

>> a.^a

ans =
```

```
  1.0e+10 *

  0.000000000100000   0.000000000400000   0.000000002700000
  0.000000025600000   0.000000312500000   0.000004665600000
  0.000082354300000   0.001677721600000   1.000000000000000

>> p=a.*a

p =

    1    4    9
   16   25   36
   49   64  100

>> A=[a, a]

A =

    1    2    3    1    2    3
    4    5    6    4    5    6
    7    8   10    7    8   10

>> A=[a,a]

A =

    1    2    3    1    2    3
    4    5    6    4    5    6
```

```
    7     8    10     7     8    10

>> A=[a;a]

A =

    1     2     3
    4     5     6
    7     8    10
    1     2     3
    4     5     6
    7     8    10

>> sqrt(-1)

ans =

  0.000000000000000 + 1.000000000000000i

>> c=[3+4i,4+3j;-i,10j]

c =

  3.000000000000000 + 4.000000000000000i  4.000000000000000 + 3.000000000000000i
  0.000000000000000 - 1.000000000000000i  0.000000000000000 +10.000000000000000i

>>
```

MathWorks | Training Services

Amlan Nayak

has successfully completed

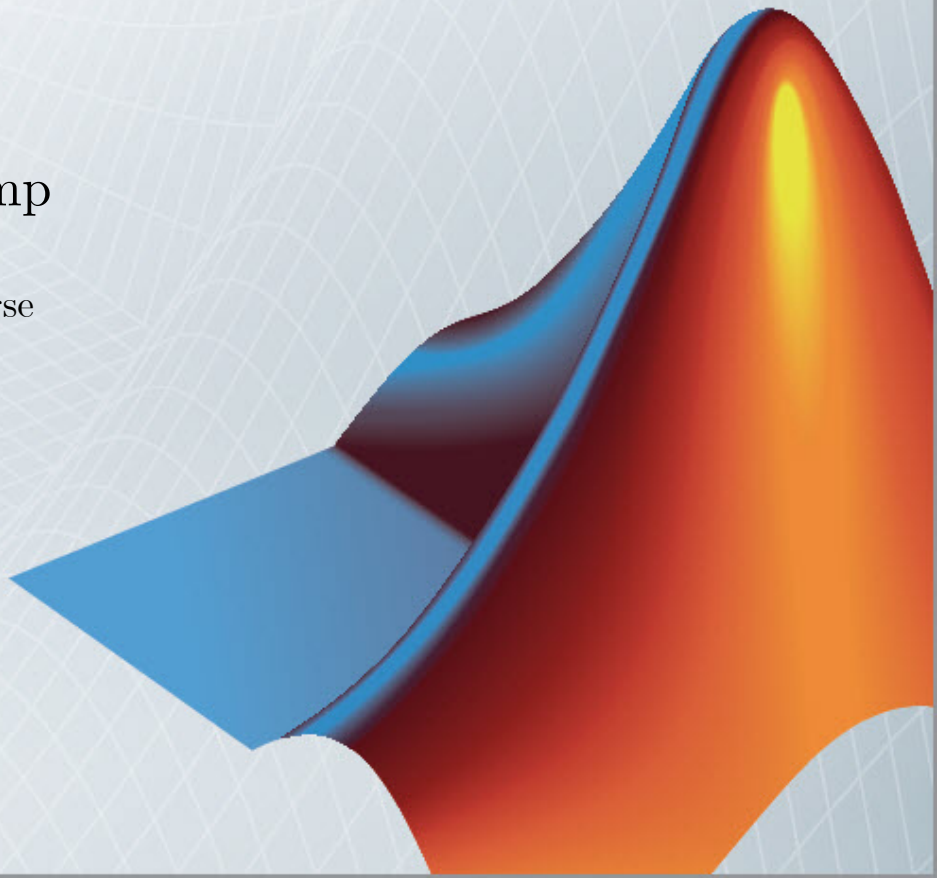
100%

of the

MATLAB Onramp

self-paced training course

21-Jul-2019



```
clc
clear all
syms x y
z = 2*x+4*y-x^2-y^2+4;
d1=diff(z,x);
d2=diff(d1,x);
r = solve(d1,x)
for i=1:length(r)
 r(i) = subs(d2,x,r(i));end
   if(r(i)<0)
       fprintf('z has maximum value at x =%f',r(i))
   else
       fprintf('z has minimum value at x =%f',r(i))
   end
```

```
r =

1

z has maximum value at x =-2.000000
```

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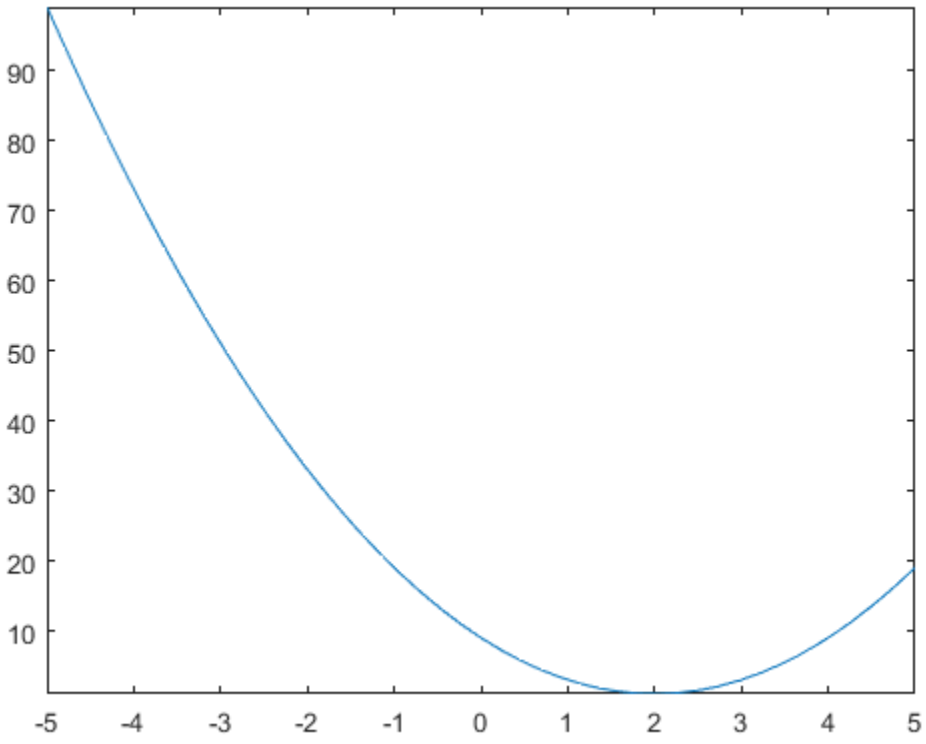
```
% name-amlan nayak
% reg. no.-19bcd7143
% date-2/8/19
syms x
y = 2*x^2-8*x+9;
g = diff(y);
f = solve(g)
a = subs(y,f)
fplot(y)
```

```
f =

2


a =

1
```



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```
% name-amlna nayak
% reg. no -19bcd7143
% date-9/8/19
syms x y
 f=sin(pi*x)+sin(pi*y)
 u=diff(f,x)
 v=diff(u,x)
 w=diff(f,y)
 x=diff(w,y)
 v+x
```

```
f =

sin(pi*x) + sin(pi*y)
```

```
u =

pi*cos(pi*x)
```

```
v =

-pi^2*sin(pi*x)
```

```
w =

pi*cos(pi*y)
```

```
x =

-pi^2*sin(pi*y)
```

```
ans =

- pi^2*sin(pi*x) - pi^2*sin(pi*y)
```

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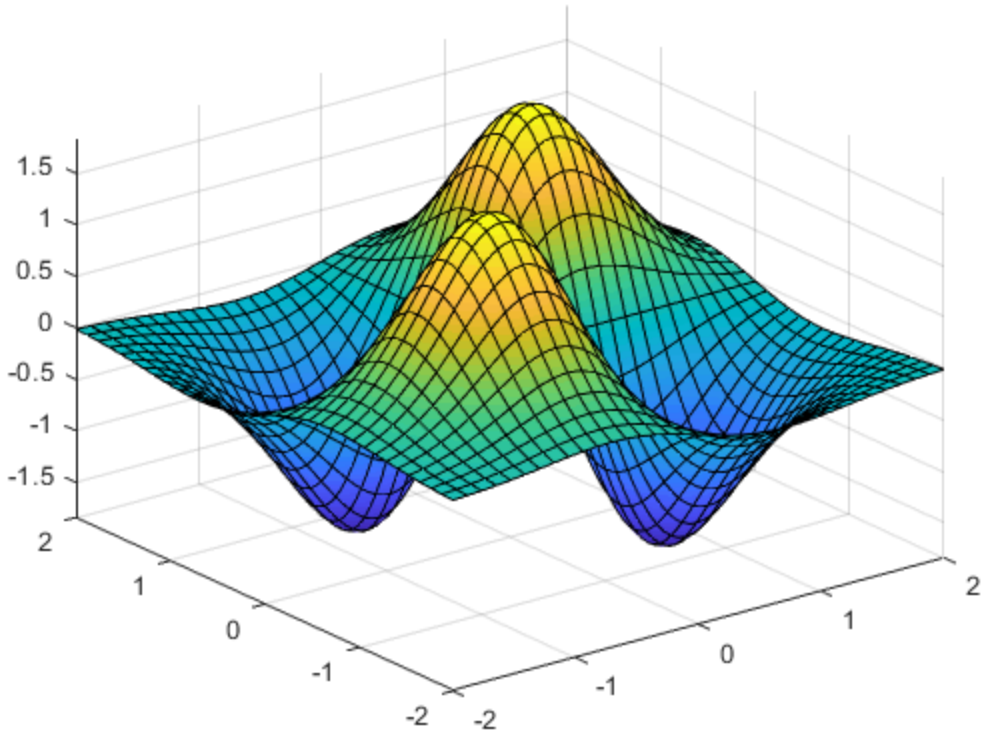
```
% name-amlan nayak
% reg. no.-19bcd7143
% date-9/8/19
syms x y
f(x,y) = 10*x*y*exp(-(x^2 + y^2));
fx = diff(f,x)
fy = diff(f,y)
[xc,yc] = solve(fx,fy,x,y)
fxx = diff(fx,x)
fxy = diff(fx,y)
fyy = diff(fy,y)
D = fxx*fyy - fxy^2
k = solve(D)
figure(1); fsurf(f,[-2,2,-2,2]);
```

```
fx(x, y) =

10*y*exp(- x^2 - y^2) - 20*x^2*y*exp(- x^2 - y^2)


fy(x, y) =

10*x*exp(- x^2 - y^2) - 20*x*y^2*exp(- x^2 - y^2)


xc =

          0
 -2^(1/2)/2
  2^(1/2)/2
 -2^(1/2)/2
  2^(1/2)/2


yc =

          0
 -2^(1/2)/2
 -2^(1/2)/2
  2^(1/2)/2
  2^(1/2)/2


fxx(x, y) =

40*x^3*y*exp(- x^2 - y^2) - 60*x*y*exp(- x^2 - y^2)


fxy(x, y) =

10*exp(- x^2 - y^2) - 20*x^2*exp(- x^2 - y^2) - 20*y^2*exp(- x^2 -
 y^2) + 40*x^2*y^2*exp(- x^2 - y^2)
```

```
fyy(x, y) =

40*x*y^3*exp(- x^2 - y^2) - 60*x*y*exp(- x^2 - y^2)


D(x, y) =

(60*x*y*exp(- x^2 - y^2) - 40*x*y^3*exp(- x^2 - y^2))*(60*x*y*exp(-
 x^2 - y^2) - 40*x^3*y*exp(- x^2 - y^2)) - (10*exp(- x^2 - y^2) -
 20*x^2*exp(- x^2 - y^2) - 20*y^2*exp(- x^2 - y^2) + 40*x^2*y^2*exp(-
 x^2 - y^2))^2


k =

  ((5*y^2 - 2*y^4 + y*(-(2*y^2 - 3)*(- 2*y^4 + 11*y^2 + 4))^(1/2) +
1)/(2*(2*y^2 + 1)))^(1/2)
  ((5*y^2 - 2*y^4 - y*(-(2*y^2 - 3)*(- 2*y^4 + 11*y^2 + 4))^(1/2) +
1)/(2*(2*y^2 + 1)))^(1/2)
 -((5*y^2 - 2*y^4 + y*(-(2*y^2 - 3)*(- 2*y^4 + 11*y^2 + 4))^(1/2) +
1)/(2*(2*y^2 + 1)))^(1/2)
 -((5*y^2 - 2*y^4 - y*(-(2*y^2 - 3)*(- 2*y^4 + 11*y^2 + 4))^(1/2) +
1)/(2*(2*y^2 + 1)))^(1/2)
```



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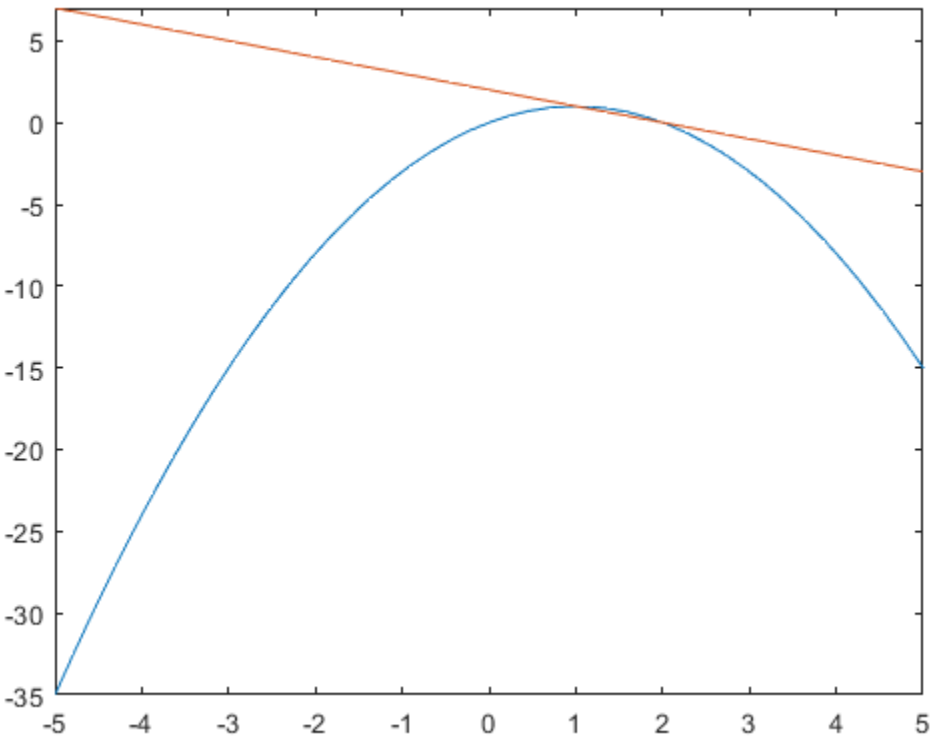
```
% name-amlan nayak
% reg no.-19bcd7143
% date-16/8/19
syms x
a = 2*x-x^2;
b = 2-x;
c = solve(a-b)
z = int(a-b,c)
fplot(a)
hold on
fplot(b)
```

```
c =

 1
 2


z =

1/6
```



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```
% Name-Amlan Nayak
% Reg. no-19BCD7143
% Date-30/8/19
clc
clear all
syms x y z
z1= 4 - x^2 - y^2;
z2= x^2 + y^2;
d= 1 + x;
ry=solve(z1-z2,y);
ylim1=ry(1);
ylim2=ry(2);
rx=solve(ry(1),x);
xlim1=rx(1);
xlim2=rx(2);
volume=int(int(int(1,z,z2,z1),y,ylim2,ylim1),x,xlim1,xlim2)
vpa(volume)
M=int(int(int(d,z,z1,z2),y,ylim2,ylim1),x,xlim2,xlim1)
Myz=int(int(int(x*d,z,z1,z2),y,ylim2,ylim1),x,xlim2,xlim1)
Mxz=int(int(int(y*d,z,z1,z2),y,ylim2,ylim1),x,xlim2,xlim1)
Mxy=int(int(int(z*d,z,z1,z2),y,ylim2,ylim1),x,xlim2,xlim1)

C=[Myz/M , Mxz/M , Mxy/M]

Ix=int(int(int((y^2+z^2)*d,z,z1,z2),y,ylim2,ylim1),x,xlim2,xlim1)
Iy=int(int(int((x^2+z^2)*d,z,z1,z2),y,ylim2,ylim1),x,xlim2,xlim1)
Iz=int(int(int((x^2+y^2)*d,z,z1,z2),y,ylim2,ylim1),x,xlim2,xlim1)

viewSolid(z,z2,z1,y,ylim2,ylim1,x,-2^(1/2),2^(1/2))
rotate3d on
```

```
volume =
4*pi


ans =

12.566370614359172953850573533118


M =

4*pi


Myz =

(4*pi)/3


Mxz =

0


Mxy =

8*pi


C =

[ 1/3, 0, 2]


Ix =

20*pi


Iy =

20*pi


Iz =

(8*pi)/3

Warning: Imaginary parts of complex X, Y, and/or Z arguments ignored
Warning: Imaginary parts of complex X, Y, and/or Z arguments ignored
Warning: Imaginary parts of complex X, Y, and/or Z arguments ignored
Warning: Imaginary parts of complex X, Y, and/or Z arguments ignored
Warning: Imaginary parts of complex X, Y, and/or Z arguments ignored
Warning: Imaginary parts of complex X, Y, and/or Z arguments ignored
Warning: Imaginary parts of complex X, Y, and/or Z arguments ignored
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Warning: Imaginary parts of complex X, Y, and/or Z arguments ignored
Warning: Imaginary parts of complex X, Y, and/or Z arguments ignored
Warning: Imaginary parts of complex X, Y, and/or Z arguments ignored
Warning: Imaginary parts of complex X, Y, and/or Z arguments ignored
```

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```
% name-amlan nayak
% reg. no.-19bcd7143
% date-6/9/19
syms x y z
f=x*y + y*z + z*x;
gradient(f,[x,y,z])
```

```
ans =

 y + z
 x + z
 x + y
```

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```
% name-amlan nayak
% reg. no.-19bcd7143
% date-6/9/19
syms x y z
f=[3*x^2*y y*z x*y];
vars=[x y z];
divergence(f,vars)
```

```
ans =

z + 6*x*y
```

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```
% name-amlan nayak
% reg. no.-19bcd7143
% date-6/9/19
syms x y z
f=[x^2*y*z x*y^2*z x*y*z^2];
curl(f,[x,y,z])
```

```
ans =

   x*z^2 - x*y^2
   y*x^2 - y*z^2
 - z*x^2 + z*y^2
```

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```
% name-amlan nayak
% reg no-19BCD7143
% date-13/9/19

syms x y z t
f = [z x*y -y^2]
r = [t^2 t sqrt(t)]
l=0
u=1
dr1 = diff(r,t)
f1 = subs(f,[x,y,z],[r(1),r(2),r(3)])
nf = f1.*dr1
nf1 = sum(nf)
i = int(nf1,t,l,u)


f =

[ z, x*y, -y^2]


r =

[ t^2, t, t^(1/2)]


l =

     0


u =

     1


dr1 =

[ 2*t, 1, 1/(2*t^(1/2))]


f1 =

[ t^(1/2), t^3, -t^2]


nf =

[ 2*t^(3/2), t^3, -t^(3/2)/2]


nf1 =
```

```
t^3 + (3*t^(3/2))/2
```

```
i =
```

```
17/20
```

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```
% name-amlan nayak
% reg no.-19bcd7143
% date- 20/9/19

clc
clear all
syms x y t
F = [x-y x];
r = [cos(t) sin(t)]
```

r = $(\cos(t) \quad \sin(t))$

```
l = 0
```

l = 0

```
u = 2*pi
```

u = 6.2832

```
dr1 = diff(r,t)
```

dr1 = $(-\sin(t) \quad \cos(t))$

```
f1 = subs(F,[x,y],[r(1),r(2)])
```

f1 = $(\cos(t) - \sin(t) \quad \cos(t))$

```
nf = f1.*dr1
```

nf = $(-\sin(t) \ (\cos(t) - \sin(t)) \quad \cos(t)^2)$

```
nf1 = sum(nf)
```

nf1 = $\cos(t)^2 - \sin(t) \ (\cos(t) - \sin(t))$

```
i = int(nf1,t,l,u)
```

i = $2\,\pi$

```
P = inline(vectorize(F(1)), 'x', 'y')
```

P =

```
     Inline function:
     P(x,y) = x - y
```

```
Q = inline(vectorize(F(2)), 'x', 'y')
```

Q =

```
     Inline function:
     Q(x,y) = x
```

```
x = linspace(0,2*pi,10);y=x
```

```
y = 1×10
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869 ···
```

```
[X,Y] = meshgrid(x,y)
```

```
X = 10×10
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869 ···
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869
Y = 10×10
         0         0         0         0         0         0         0         0 ···
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
```

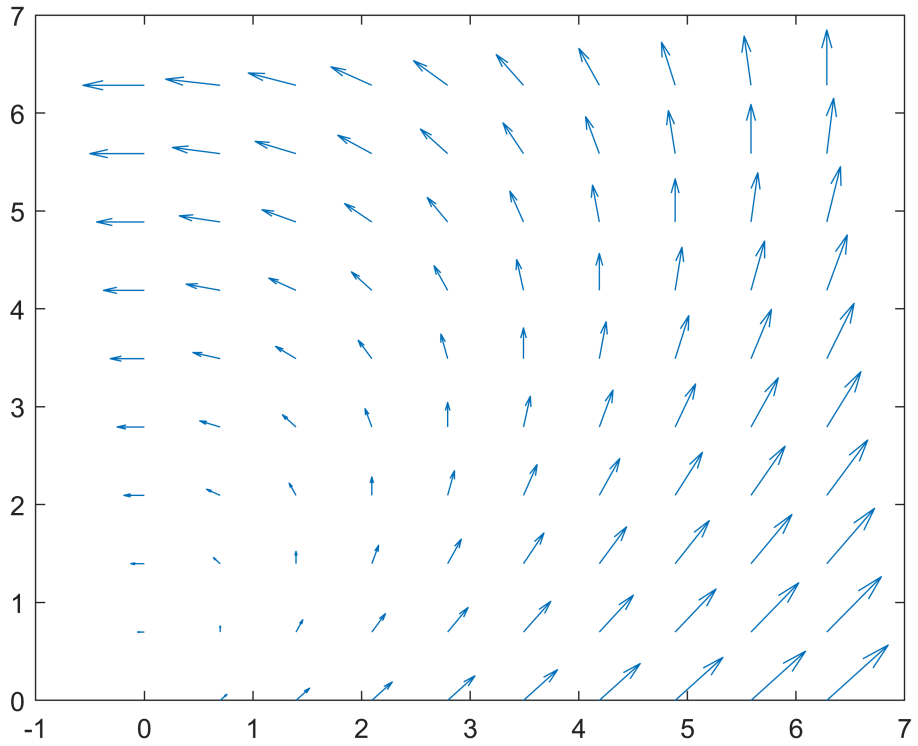
```
U = P(X,Y)
```

```
U = 10×10
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869 ···
   -0.6981         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888
   -1.3963   -0.6981         0    0.6981    1.3963    2.0944    2.7925    3.4907
   -2.0944   -1.3963   -0.6981         0    0.6981    1.3963    2.0944    2.7925
   -2.7925   -2.0944   -1.3963   -0.6981         0    0.6981    1.3963    2.0944
   -3.4907   -2.7925   -2.0944   -1.3963   -0.6981         0    0.6981    1.3963
   -4.1888   -3.4907   -2.7925   -2.0944   -1.3963   -0.6981         0    0.6981
   -4.8869   -4.1888   -3.4907   -2.7925   -2.0944   -1.3963   -0.6981         0
   -5.5851   -4.8869   -4.1888   -3.4907   -2.7925   -2.0944   -1.3963   -0.6981
   -6.2832   -5.5851   -4.8869   -4.1888   -3.4907   -2.7925   -2.0944   -1.3963
```

```
V = Q(X,Y)
```

```
V = 10×10
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869 ···
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869
```

```
quiver(x,y,U,V)
```


7
6
5
4
3
2
1
0
-1
0
1
2
3
4
5
6
7

```
% name-amlan nayak
% reg no.-19BCD7143
% date-20/9/19

clc
clear all
syms x y z t
F = [x z y];
r = [cos(t) sin(t) t]
```

r = $(\cos(t) \quad \sin(t) \quad t)$

```
l = 0
```

l = 0

```
u = pi/2
```

u = 1.5708

```
dr1 = diff(r,t)
```

dr1 = $(-\sin(t) \quad \cos(t) \quad 1)$

```
f1 = subs(F,[x,y,z],[r(1),r(2),r(3)])
```

f1 = $(\cos(t) \quad t \quad \sin(t))$

```
nf = f1.*dr1
```

nf = $(-\cos(t)\sin(t) \quad t\cos(t) \quad \sin(t))$

```
nf1 = sum(nf)
```

nf1 = $\sin(t) - \cos(t)\sin(t) + t\cos(t)$

```
i = int(nf1,t,l,u)
```

i =

$$\frac{\pi}{2} - \frac{1}{2}$$

```
P = inline(vectorize(F(1)), 'x', 'y', 'z')
```

P =

```
     Inline function:
     P(x,y,z) = x
```

```
Q = inline(vectorize(F(2)), 'x', 'y', 'z')
```

Q =

```
     Inline function:
     Q(x,y,z) = z
```

```
R = inline(vectorize(F(3)), 'x', 'y', 'z')
```

```
R =

     Inline function:
     R(x,y,z) = y
```

```
x = linspace(0,2*pi,10);y=x;z=x
```

```
z = 1×10
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869 ···
```

```
[X,Y,Z] = meshgrid(x,y,z)
```

```
X =
X(:,:,1) =

         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832


X(:,:,2) =

         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832


X(:,:,3) =

         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832


X(:,:,4) =

         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
```

```
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832

X(:,:,5) =

         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832

X(:,:,6) =

         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832

X(:,:,7) =

         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832

X(:,:,8) =

         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832

X(:,:,9) =
```

```
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832


X(:,:,10) =

         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
Y =
Y(:,:,1) =

         0         0         0         0         0         0         0         0         0         0
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832


Y(:,:,2) =

         0         0         0         0         0         0         0         0         0         0
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832


Y(:,:,3) =

         0         0         0         0         0         0         0         0         0         0
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
```

```
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
```

```
Y(:,:,4) =

         0         0         0         0         0         0         0         0         0         0
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
```

```
Y(:,:,5) =

         0         0         0         0         0         0         0         0         0         0
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
```

```
Y(:,:,6) =

         0         0         0         0         0         0         0         0         0         0
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
```

```
Y(:,:,7) =

         0         0         0         0         0         0         0         0         0         0
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
```

```
Y(:,:,8) =

         0         0         0         0         0         0         0         0         0         0
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
```

```
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832


Y(:,:,9) =

         0         0         0         0         0         0         0         0         0         0
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832


Y(:,:,10) =

         0         0         0         0         0         0         0         0         0         0
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
Z =
Z(:,:,1) =

     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0


Z(:,:,2) =

    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981


Z(:,:,3) =
```

1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963
1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963
1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963
1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963
1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963
1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963
1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963
1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963
1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963
1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963	1.3963

Z(:,:,4) =

2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944
2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944
2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944
2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944
2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944
2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944
2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944
2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944
2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944
2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944	2.0944

Z(:,:,5) =

2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925
2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925
2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925
2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925
2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925
2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925
2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925
2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925
2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925
2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925	2.7925

Z(:,:,6) =

3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907
3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907
3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907
3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907
3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907
3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907
3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907
3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907
3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907
3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907	3.4907

Z(:,:,7) =

4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888
4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888
4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888
4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888
4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888
4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888
4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888
4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888
4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888
4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888	4.1888

```
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888

Z(:,:,8) =

    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869

Z(:,:,9) =

    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851

Z(:,:,10) =

    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
```

```
U = P(X,Y,Z)
```

```
U =
U(:,:,1) =

         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832

U(:,:,2) =

         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
```

```
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832

U(:,:,3) =

         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832

U(:,:,4) =

         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832

U(:,:,5) =

         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832

U(:,:,6) =

         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
```

```
U(:,:,7) =

         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832


U(:,:,8) =

         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832


U(:,:,9) =

         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832


U(:,:,10) =

         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
         0    0.6981    1.3963    2.0944    2.7925    3.4907    4.1888    4.8869    5.5851    6.2832
```

```
V = Q(X,Y,Z)
```

```
V =
V(:,:,1) =

     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0
```

```
     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0
```

V(:,:,2) =

```
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
```

V(:,:,3) =

```
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
```

V(:,:,4) =

```
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
```

V(:,:,5) =

```
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
```

V(:,:,6) =

```
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907

V(:,:,7) =

    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888

V(:,:,8) =

    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869

V(:,:,9) =

    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851

V(:,:,10) =

    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
```

```
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
```

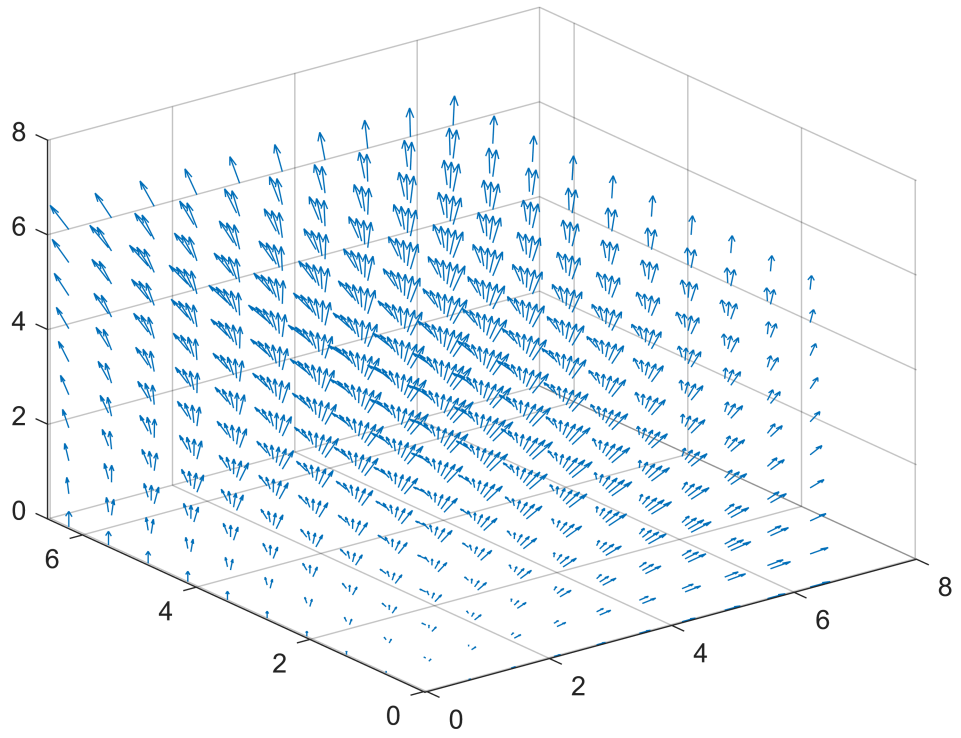
```
W = R(X,Y,Z)
```

```
W =
W(:,:,1) =

         0         0         0         0         0         0         0         0         0         0
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832


W(:,:,2) =

         0         0         0         0         0         0         0         0         0         0
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832


W(:,:,3) =

         0         0         0         0         0         0         0         0         0         0
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832


W(:,:,4) =

         0         0         0         0         0         0         0         0         0         0
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832


W(:,:,5) =

         0         0         0         0         0         0         0         0         0         0
```

```
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832


W(:,:,6) =

         0         0         0         0         0         0         0         0         0         0
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832


W(:,:,7) =

         0         0         0         0         0         0         0         0         0         0
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832


W(:,:,8) =

         0         0         0         0         0         0         0         0         0         0
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832


W(:,:,9) =

         0         0         0         0         0         0         0         0         0         0
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
```

```
W(:,:,10) =

         0         0         0         0         0         0         0         0         0         0
    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981    0.6981
    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963    1.3963
    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944    2.0944
    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925    2.7925
    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907    3.4907
    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888    4.1888
    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869    4.8869
    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851    5.5851
    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832    6.2832
```

```
quiver3(X,Y,Z,U,V,W)
```



```
% name - amlan nayak
% reg no.-19BCD7143
% date-20/9/19
syms x y t m n
F = [m,n]
```

F = $\begin{pmatrix} m & n \end{pmatrix}$

```
x = cos(t)
```

x = $\cos(t)$

```
y = sin(t)
```

y = $\sin(t)$

```
dx = diff(x,t)
```

dx = $-\sin(t)$

```
dy = diff(y,t)
```

dy = $\cos(t)$

```
m = x - y
```

m = $\cos(t) - \sin(t)$

```
n =x
```

n = $\cos(t)$

```
i = int(m*dy,t,0,2*pi)
```

i = π

```
j = int(n*dx,t,0,2*pi)
```

j = 0

```
flux = i-j
```

flux = π

```
% name-amlan shivam nayak
% reg no.-19bcd7143
% date-11/10/19
clear all
clc
syms x y t
f = [x-y x]
m = x-y
n = x
p = diff(n,y)
q = diff(m,x)
x = cos(t)
y = sin(t)
s = int(p+q,t,0,2*pi)
```

```
f =

[ x - y, x]
```

```
m =

x - y
```

```
n =

x
```

```
p =

0
```

```
q =

1
```

```
x =

cos(t)
```

```
y =

sin(t)
```

```
s =
```

```
2*pi
```

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```
% name-amlan shivam nayak
% reg no.-19bcd7143
% date-11/10/19
clear all
clc
syms x y t
f = [x-y x]
m = x-y
n = x
p = diff(n,x)
q = diff(m,y)
x = cos(t)
y = sin(t)
s = int(p-q,t,0,2*pi)
```

```
f =

[ x - y, x]
```

```
m =

x - y
```

```
n =

x
```

```
p =

1
```

```
q =

-1
```

```
x =

cos(t)
```

```
y =

sin(t)
```

```
s =
```

```
4*pi
```

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```
% name-Amlan Shivam Nayak
% reg no.-19bcd7143
% date-18/10/19
clear all
clc
syms v(x) c b
ode = v*diff(v,x) + b*v^2 + c*x == 0;
vSol(x) = dsolve(ode)
vSol(0)
```

```
vSol(x) =

  ((exp(-2*b*x)*(C3 + c*exp(2*b*x) - 2*b*c*x*exp(2*b*x)))/
(2*b^2))^(1/2)
 -((exp(-2*b*x)*(C3 + c*exp(2*b*x) - 2*b*c*x*exp(2*b*x)))/
(2*b^2))^(1/2)


ans =

  ((C3 + c)/(2*b^2))^(1/2)
 -((C3 + c)/(2*b^2))^(1/2)
```

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```
% name-Amlan Shivam Nayak
% reg no.-19bcd7143
% date-18/10/19
clear all
clc
syms i(t) r l v e
l=0.5
e=20
r=100
f=e/l==(r/l)*i + diff(i,t)
F(t)=dsolve(f,i(0)==0)
F(0.5)
```

```
l =

    0.5000


e =

    20


r =

   100


f(t) =

40 == 200*i(t) + diff(i(t), t)


F(t) =

1/5 - exp(-200*t)/5


ans =

1/5 - exp(-100)/5
```

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```
% name-amlan nayak
% reg no.-19bcd7143
% date-25/10/19
clear all
clc
syms y(t)
ode = diff(y,t) + (y/(10+t))*2 == 0;
y(t) = dsolve(ode,y(0)==20)
```

```
y(t) =
```

$$\frac{2000}{(t+10)^2}$$

```
vpa(y(5))
```

```
ans = 8.8888888888888888888888888888889
```

```
% name-amlan nayak
% reg no.-19bcd7143
% date-25/10/19
clear all
clc
syms y(x)
Dy = diff(y);
ode = diff(y,x,2) -3*diff(y,x) +2*y ==x^2 + exp(x);
ySol(x) = dsolve(ode)
```

```
ySol(x) =
```

$$C_3\,e^{x} - e^{2x}\left(e^{-x} + e^{-2x}\left(\frac{x^2}{2} + \frac{x}{2} + \frac{1}{4}\right)\right) + e^{x}\,(2\,e^{-x} - x + 2\,x\,e^{-x} + x^2\,e^{-x}) + C_4\,e^{2x}$$

```
% name-amlan nayak
% reg no.-19bcd7143
% date-25/10/19
clear all
clc
syms y(x) x
Dy = diff(y);
ode = diff(y,x,2) +y == 2*cos(x);
ySol(x) = dsolve(ode)
```

```
ySol(x) =
```

$$\frac{\cos(3\,x)}{4}+\frac{3\cos(x)}{4}+C_3\cos(x)-C_4\sin(x)+\sin(x)\left(x+\frac{\sin(2\,x)}{2}\right)$$