

## LAB TASK 08

### CODE

```
A = mat([[83,11,-4,95],[7,52,13,104],[3,8,29,71]])
```

```
B = mat([[8,-3,2,45],[4,11,-1,71],[6,3,12,35]])
```

```
C = mat([[3,2,1,10],[2,3,2,14],[1,2,3,14]])
```

```
# For A
```

```
A[1,:]=A[1,:]-A[0,:]*A[1,0]/A[0,0]
```

```
A[2,:]=A[2,:]-A[0,:]*A[2,0]/A[0,0]
```

```
A[2,:]=A[2,:]-A[1,:]*A[2,1]/A[1,1]
```

```
z = A[2,3]/A[2,2] y = (A[1,3]-
```

```
(A[1,2]*z)) / A[1,1] x = (A[0,3]-
```

```
A[0,1]*y - A[0,2]*z)/A[0,0]
```

```
print('Function A',' ','X ','Y ','Z  
' )
```

```
print(A,' ','x',' ','y',' ','z)
```

```
# For B
```

```
B[1,:]=B[1,:]-B[0,:]*B[1,0]/B[0,0]
```

```
B[2,:]=B[2,:]-B[0,:]*B[2,0]/B[0,0]
```

```
B[2,:]=B[2,:]-B[1,:]*B[2,1]/B[1,1]
```

```
xx=B[2,3]/B[2,2] yy=(B[1,3]-
```

```
B[1,2]*xx)/B[1,1] zz=(B[0,3]-
```

```
B[0,1]*yy-B[0,2]*xx)/B[0,0]
```

```
print('\nFunction B','      ','      ' X ' ','      ' Y ' ','      ' Z ')
```

```
print(B,'      ','xx','      ','yy','      ','zz)
```

```
# For C
```

```
C[1,:]=C[1,:]-C[0,:]*C[1,0]/C[0,0]
```

```
C[2,:]=C[2,:]-C[0,:]*C[2,0]/C[0,0]
```

```
C[2,:]=C[2,:]-C[1,:]*C[2,1]/C[1,1]
```

```
xxx=C[2,3]/C[2,2] yyy=(C[1,3]-C[1,2]*xxx)/C[1,1]
```

```
zzz=(C[0,3]-C[0,1]*yyy-C[0,2]*xxx)/C[0,0]
```

```
print('\nFunction C','      ','      ' X ' ','      ' Y ' ','      ' Z
```

```
')
```

```
print(C,'      ','xxx','      ','yyy','      ','zzz)
```

```

1 A = mat([[83,11,-4,95],[7,52,13,104],[3,8,29,71]])
2 B = mat([[8,-3,2,45],[4,11,-1,71],[6,3,12,35]])
3 C = mat([[3,2,1,10],[2,3,2,14],[1,2,3,14]])
4
5 # For A
6 A[1,:] = A[1,:]-A[0,:]*A[1,0]/A[0,0]
7 A[2,:] = A[2,:]-A[0,:]*A[2,0]/A[0,0]
8 A[2,:] = A[2,:]-A[1,:]*A[2,1]/A[1,1]
9
10 z = A[2,3]/A[2,2]
11 y = (A[1,3]-(A[1,2]*z)) / A[1,1]
12 x = (A[0,3]-A[0,1]*y - A[0,2]*z)/A[0,0]
13
14 print('Function A',' ',' ','X ',' ','Y ',' ','Z ')
15 print(A,' ','x',' ','y',' ','z)|
16
17 # For B
18 B[1,:] = B[1,:]-B[0,:]*B[1,0]/B[0,0]
19 B[2,:] = B[2,:]-B[0,:]*B[2,0]/B[0,0]
20 B[2,:] = B[2,:]-B[1,:]*B[2,1]/B[1,1]
21
22 xx=B[2,3]/B[2,2]
23 yy=(B[1,3]-B[1,2]*xx)/B[1,1]
24 zz=(B[0,3]-B[0,1]*yy-B[0,2]*xx)/B[0,0]
25
26 print('\nFunction B',' ',' ','X ',' ','Y ',' ','Z ')
27 print(B,' ','xx',' ','yy',' ','zz)
28
29 # For C
30 C[1,:] = C[1,:]-C[0,:]*C[1,0]/C[0,0]
31 C[2,:] = C[2,:]-C[0,:]*C[2,0]/C[0,0]
32 C[2,:] = C[2,:]-C[1,:]*C[2,1]/C[1,1]
33
34 xxx=C[2,3]/C[2,2]
35 yyy=(C[1,3]-C[1,2]*xxx)/C[1,1]
36 zzz=(C[0,3]-C[0,1]*yyy-C[0,2]*xxx)/C[0,0]
37
38 print('\nFunction C',' ',' ','X ',' ','Y ',' ','Z ')
39 print(C,' ','xxx',' ','yyy',' ','zzz)
40

```

Function A	X	Y	Z
[[83 11 -4 95]			
[ 0 51 13 95]			
[ 0 0 27 53]]	1.0586222887191468	1.3623819898329703	1.962962962962963
Function B	X	Y	Z
[[ 8 -3 2 45]			
[ 0 12 -2 48]			
[ 0 0 10 -19]]	-1.9	3.6833333333333336	7.4812499999999999
Function C	X	Y	Z
[[ 3 2 1 10]			
[ 0 1 1 7]			
[ 0 0 1 3]]	3.0	4.0	-0.3333333333333333