

NAME;AYEOMERETSE EWORITSE N YOMERE
MATRIC NO; 16/ENG05/014
MECHATRONICS ENGINEERING

ANSWER TO QUESTION 1

```
Commandwindow  
clear  
clc
```

ANSWER TO QUESTION 2

```
commandwindow  
clear  
clc  
A= [2 3 7 9 4; 3 7 9 12 5; 4 8 5 6 9; 5 9 2 4 5; 6 2 3 7 8]
```

```
A=  2   3   7   9   4  
    3   7   9  12   5  
    4   8   5   6   9  
    5   9   2   4   5  
    6   2   3   7   8
```

```
F= det(A)
```

```
F = -765.0000
```

```
O= transpose(A)
```

```
O =  2   3   4   5   6  
     3   7   8   9   2  
     7   9   5   2   3  
     9  12   6   4   7  
     4   5   9   5   8
```

```
I= inv(A)
```

```
I=  1.8915 -1.4026 -0.3124  0.7843 -0.2078
```

```
    -0.4379  0.3268  0.0523 -0.0392 -0.0196
```

```
    2.5725 -1.8392 -0.0863  0.7647 -0.5176
```

```
    -1.8876  1.4654  0.0105 -0.6078  0.3961
```

```
    -0.6222  0.3778  0.2444 -0.3333  0.1333
```

```
J= rats(I)
```

```
J=  401/212  -108/77  -239/765  40/51  -53/255
```

```
    -67/153  50/153  8/153  -2/51  -1/51
```

```
    656/255  -469/255  -22/255  13/17  -44/85
```

-319/169 148/101 3/287 -31/51 101/255
-28/45 17/45 11/45 -1/3 2/15

SOLUTION TO QUESTION 3

```
commandwindow  
clear  
clc  
M= [0 10 4 -2; -3 -17 1 2; 1 1 1 0; 8 -34 16 -10]  
M =
```

```
     0     10      4     -2  
    -3    -17      1      2  
     1      1      1      0  
     8    -34     16    -10  
T= [-4; 2; 6; 4]
```

```
T= -4  
     2  
     6  
     4  
K= inv(M)
```

```
M=-0.1786 -0.1020  0.5714  0.0153  
     0.0357 -0.0153  0.0357 -0.0102  
     0.1429  0.1173  0.3929 -0.0051  
    -0.0357  0.1582  0.9643 -0.0612
```

```
L= K * T
```

```
L= 4.0000
```

```
-0.0000
```

```
2.0000
```

```
6.0000
```