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Mechanical Engineering

Eng 281

16/ENG06/012

1)

a) Clear - to clear variables in workspace.

b) clc - to clear variables in command window.

2) CODES:

1. commandwindow

2. clear

3. clc

4. 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]

5. determinant=det(A)

6. transpose=transpose(A)

7. inverse=inv(A)

8. sym(inverse)

OUTPUTS:

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
```

determinant =

-765.0000

tran =

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

inverse =

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

inverse =

[1447/765, -1073/765, -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]
[-1444/765, 1121/765, 8/765, -31/51, 101/255]
[-28/45, 17/45, 11/45, -1/3, 2/15]

3) CODES:

1. commandwindow
2. clear
3. clc
4. A=[0 10 4 -2;-3 -17 1 2;1 1 1 0;8 -34 16 -10]
5. B=[-4;2;6;4]
6. invar= inv(A)
7. Answer=invar*B
8. w=Answer(1,1)
9. x=Answer(2,1)
10. y=Answer(3,1)
11. z=Answer(4,1)

OUTPUTS:

A =

```
0  10  4  -2
-3 -17  1  2
1   1  1  0
8 -34 16 -10
```

B =

```
-4
2
6
4
```

invar =

-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

Answer =

4.0000
-0.0000
2.0000
6.0000

w =

4

x =

-9.7145e-17

y =

2.0000

z =

6.0000