

## GaussElimSample

### Example 1

Enter the name of the data file:

Mat4sam1.dat

The original system is

```
4.00000000 -2.00000000 0.00000000 0.00000000 4.000000
0.00000000 0.00000000 -3.00000000 4.00000000 1.000000
0.00000000 -1.00000000 4.00000000 -2.00000000 2.000000
-2.00000000 5.00000000 -3.00000000 0.00000000 -5.000000
```

The condition number of a is:

1.1785714286E+01

Press a key to continue

The inverse of A is:

```
3.3928571429E-01 1.0714285714E-01 2.1428571429E-01 1.7857142857E-01
1.7857142857E-01 2.1428571428E-01 4.2857142857E-01 3.5714285714E-01
7.1428571428E-02 2.8571428571E-01 5.7142857143E-01 1.4285714286E-01
5.3571428571E-02 4.6428571428E-01 4.2857142857E-01 1.0714285714E-01
```

Press a key to continue

\*\*\*\*\*

Elapsed time for decomp: 0.0000000000E+00 sec.

cond1= 1.0000000000E+00

```
4.0000000000E+00
-5.0000000000E+00
2.0000000000E+00
1.0000000000E+00
```

\*\*\*\*\*

Elapsed time for solve: 0.0000000000E+00 sec.

The solution vector is:

```
ipvt1=1 x1= 1.000000
ipvt2=4 x2= -0.000000
ipvt3=3 x3= 1.000000
ipvt4=2 x4= 1.000000
```

Press a key to continue

The factored matrix is

```
4.0000000000E+00 -2.0000000000E+00 0.0000000000E+00 0.0000000000E+00
-5.0000000000E-01 4.0000000000E+00 -3.0000000000E+00 0.0000000000E+00
0.0000000000E+00 -2.5000000000E-01 3.2500000000E+00 -2.0000000000E+00
0.0000000000E+00 0.0000000000E+00 -9.2307692308E-01 2.1538461539E+00
```

determinant of a = -1.1200000000E+02

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### Example 2

Enter the name of the data file:

mat6.dat

The original system is

```
2.00000000 -4.00000000 1.00000000 11.000000
4.00000000 -5.00000000 2.00000000 7.000000
-2.00000000 -5.00000000 1.00000000 4.000000
```

GaussElimSample

The condition number of a is:  
4.9500000000E+01

Press a key to continue

The inverse of A is:  
4.1666666667E-01 -8.3333333334E-02 -2.5000000000E-01  
-6.6666666667E-01 3.3333333333E-01 0.0000000000E+00  
-2.5000000000E+00 1.5000000000E+00 5.0000000000E-01

Press a key to continue  
cond1= 1.0000000000E+00

7.0000000000E+00  
4.0000000000E+00  
1.1000000000E+01

\*\*\*\*\*

Elapsed time for solve: 0.0000000000E+00 sec.  
The solution vector is:

ipvt1=2 x1= 3.000000  
ipvt2=1 x2= -5.000000  
ipvt3=3 x3= -15.000000

Press a key to continue  
The factored matrix is

4.0000000000E+00 -5.0000000000E+00 2.0000000000E+00  
5.0000000000E-01 -1.5000000000E+00 0.0000000000E+00  
-5.0000000000E-01 5.0000000000E+00 2.0000000000E+00

determinant of a = 1.2000000000E+01