Contents


```
% HW 1 Problem 2 (a)
% Simple elim. test w/ multiple RHS

clear
clc
close all

load('testproblem.mat')

Awork=cat(2,A,b,b2,b3);

fsoln = simforelmltlb(Awork);

disp('Matlab,GNU/Octave built-in solution:  ');
x1 = A\b;
x2 = A\b2;
x3 = A\b3;
matlabans = cat(2,x1,x2,x3);
disp(matlabans)
```

```
elim([Aref,bref]) =
   1.0e+03 *

  Columns 1 through 7

   -0.0010   -0.0021    0.0022   -0.0003   -0.0008   -0.0005   -0.0003
         0    0.0021    0.0001    0.0017   -0.0014    0.0001    0.0000
         0         0   -0.0021    0.0002    0.0011    0.0015   -0.0015
         0         0         0    0.0009   -0.0009   -0.0008    0.0004
         0         0   -0.0000         0    0.0001    0.0013   -0.0010
         0         0    0.0000         0         0   -0.0086    0.0063
         0         0   -0.0000         0         0         0    0.0007
         0         0   -0.0000         0         0         0   -0.0000

  Columns 8 through 11

   -0.0003   -0.0109   -0.0217   -0.1086
    0.0005    0.0090    0.0180    0.0900
   -0.0017   -0.0149   -0.0299   -0.1494
    0.0014    0.0080    0.0161    0.0803
    0.0011    0.0111    0.0222    0.1110
   -0.0115   -0.0994   -0.1988   -0.9940
    0.0072    0.0629    0.1259    0.6293
    0.0136    0.1088    0.2176    1.0878

Elimination/back sub solution:
    1.0000    2.0000   10.0000
    2.0000    4.0000   20.0000
    3.0000    6.0000   30.0000
    4.0000    8.0000   40.0000
    5.0000   10.0000   50.0000
    6.0000   12.0000   60.0000
    7.0000   14.0000   70.0000
```

```
    8.0000   16.0000   80.0000

Matlab,GNU/Octave built-in solution:
    1.0000    2.0000   10.0000
    2.0000    4.0000   20.0000
    3.0000    6.0000   30.0000
    4.0000    8.0000   40.0000
    5.0000   10.0000   50.0000
    6.0000   12.0000   60.0000
    7.0000   14.0000   70.0000
    8.0000   16.0000   80.0000
```

Compute & display the error

```
Errr = matlabans - fsoln;
disp('The error is:  ');
disp(Errr)
```

```
The error is:
   1.0e-13 *

    0.0022    0.0044   -0.9770
   -0.0067   -0.0133   -0.0355
   -0.0888   -0.1776   -0.5684
   -0.0933   -0.1865   -0.5684
   -0.1332   -0.2665   -0.4263
   -0.0622   -0.1243         0
   -0.0444   -0.0888    0.2842
   -0.0089   -0.0178    0.2842
```

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