MATLAB

LAB 2

Code :

```
>> syms x1 x2 x3 x4
>> eq1 =x1 -x4 ==160

eq1 =

x1 - x4 == 160

>> eq2 = x1 - x2 ==240

eq2 =

x1 - x2 == 240

>> eq3 = x3-x2==600

eq3 =

x3 - x2 == 600

>> eq4 = x3-x2 == 520

eq4 =

x3 - x2 == 520

>> [A,B] = equationsToMatrix([eq1,eq2,eq3,eq4],[])

A =
```

Empty sym: 4-by-0

B =

x4 - x1 + 160

x2 - x1 + 240

x2 - x3 + 600

x2 - x3 + 520

>> [A,B] = equationsToMatrix([eq1,eq2,eq3,eq4],[x1,x2,x3,x4])

A =

[1, 0, 0, -1]

[1, -1, 0, 0]

[0, -1, 1, 0]

[0, -1, 1, 0]

B =

160

240

600

520

>> AB=[A,B]

AB =

[1, 0, 0, -1, 160]

[1, -1, 0, 0, 240]

[0, -1, 1, 0, 600]

[0, -1, 1, 0, 520]

>> alpha=A(2,1)/A(1,1)

alpha =

1

>> AB(2,:)

ans =

[1, -1, 0, 0, 240]

>> AB(1,:)

ans =

[1, 0, 0, -1, 160]

>> AB(2,:)=AB(2,:)-alpha*AB(1,:)

AB =

[1, 0, 0, -1, 160]

[0, -1, 0, 1, 80]

[0, -1, 1, 0, 600]

[0, -1, 1, 0, 520]

>> alp = A(3,2)/A(2,2)

```
alp =

1

>> AB(3,:)=AB(3,:)-alp*AB(2,:)

AB =

[1,  0, 0, -1, 160]
[0, -1, 0,  1,  80]
[0,  0, 1, -1, 520]
[0, -1, 1,  0, 520]

>> alp=A(4,3)/A(3,3)

alp =

1

>> AB(4,:)=AB(4,:)-alp*AB(3,:)

AB =

[1,  0, 0, -1, 160]
[0, -1, 0,  1,  80]
[0,  0, 1, -1, 520]
[0, -1, 0,  1,   0]
>> syms k
>> x4 = k
```

x4 =

k

x3 =

k + 520

>> x2 = -AB(2,5)+x4

x2 =

k - 80

>> x1=AB(1,5)+x4

x1 =

k + 160

>> x4=0

x4 =

0

>> x3 =AB(3,5)+x4

x3 =

520

>> x2 = -AB(2,5)+x4

x2 =

-80

>> x1=AB(1,5)+x4

x1 =

160

>> x4 =10

x4 =

10

>> x3=520+x4

x3 =

530

>> x2=-80+x4

x2 =

-70

>> x1=160+x4

x1 =

170

>>