```
1.%Guassian Elimination method to find the solution of System of Linear Equations
formatshort % display output upto 4 digits
clearall% clear all the stored variables
clc% clear the screen
% Ex:system of equations
% 6x1+3x2+2x3=   6
% 6x1+4x2+3x3=   0
%20x1+15x2+12x3= 0
info=[6 3 2; 6 4 3;20 15 12]; % Given Matrix A
b=[6;0;0];% RHS of the system of equations
A=[info b]; % write augmented matrix i,e [A | b]
for i=1:size(A,1)% size(A,1)=> number of rows in A
forj=i+1:size(A,1) % A(2,:)-key*A(1,:)---
        key1=A(j,i)./A(i,i);% to find pivot key element
A(j,:)=A(j,:)-key1.*A(i,:);% Applying elementary row operation
end
end
fprintf("Echelon Matrix A after Row Operations is\n");
fprintf("==================");
A
% Backward substitution to find the solution

x=zeros(1,size(info,2)); % intialize all solutions to zero

fori=size(A,1):-1:1 % perform back substitution
hg=sum(A(i,i+1:end-1).*x(i+1:end)); % compute sum of elements
x(i)=(A(i,end)-hg)./A(i,i); % Finding solution
end
fprintf("Solution is x=%d\n",x);
```

Output:

```
Echelon Matrix A after Row Operations is
==================
A =

    6.0000    3.0000    2.0000    6.0000
         0    1.0000    1.0000   -6.0000
         0         0    0.3333   10.0000

Solution is x=9.000000e+00
Solution is x=-3.600000e+01
Solution is x=3.000000e+01
```

2.
```
% Guass Jordan method to find the solution of System of equation Ax=B
%                                                             x=B*inv(A)
formatshort % display output upto 4 digits
clearall% clear all the stored variables
clc% clear the screen
% Ex:system of equations
%x1+x2+x3   =9
%2x1-3x2+4x3=13
%3x1+4x2+5x3=40
A=[1 1 1;2 -3 4;3 4 5];
B=[9;13;40]; % RHS of the System
AG=[A B];    % Aumented matrix
fori=1:size(AG,1)
AG(i,:)=AG(i,:)./AG(i,i); % Make diagonal entry as 1
forj=1:size(AG,1)
ifj~=i
            key1=AG(j,i)./AG(i,i); % define pivot  key element
AG(j,:)=AG(j,:)-key1.*AG(i,:); % Apply row elementary operations
end
end
end
fprintf("Solution of the Given System is\n");
AG
disp(AG(:,end));
```

Output:

```
Solution of the Given System is

AG =

     1     0     0     1
     0     1     0     3
     0     0     1     5

     1
     3
     5
```