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Question 1

```
A = [8,-2,-3;-2,6,1;-3,1,7];
b = [-20;-38;-34];
%a.
[m,n]=size(A);
p = length(b);
np1 = n+1;
Aug = [A,b];
% forward elimination
for k = 1:n-1
    for i = k+1:n
        factor = Aug(i,k) / Aug(k,k);
        Aug(i,k:np1) = Aug(i,k:np1) - factor * Aug(k,k:np1);
    end
end
% backward elimination
x(n,1) = Aug(n,np1) / Aug(n,n);
for i = n-1:-1:1
    x(i) = (Aug(i,np1)-Aug(i,i+1:n)*x(i+1:n))/Aug(i,i);
end
x
%b.
u = chol(A)
y = b\u;
y = [y(1);y(2);y(3)]
x2 = y\u'
x2 = [x(1);x(2);x(3)]
%c.
A*x
A*x2

x =

    -6.9070
    -7.5116
    -6.7442

u =

    2.8284    -0.7071    -1.0607
         0     2.3452     0.1066
         0         0     2.4215
```

`y =`

```
-0.0189
-0.0250
-0.0217
```

`x2 =`

```
-8.6919  -41.9598  -36.2262
```

`x2 =`

```
-6.9070
-7.5116
-6.7442
```

`ans =`

```
-20.0000
-38.0000
-34.0000
```

`ans =`

```
-20.0000
-38.0000
-34.0000
```

Q2.

```
clear
A = [15,3,1;3,18,6;4,1,5];
b = [-400;-150;-240];
p = [0,0,0];
u = chol(A);
y = b\u;
Y = [y(1);y(2);y(3)];
x2 = Y\u';
q = 1;
if q>.05
for i = 1:5
    z = 0;
    for j = 1:5
        if j~= i
            % z = z+A(i,j).*p(j)
        end
    end
end
```

```
        end
        % p(i) = (1./(A(i,i)))*b(i-z)
    end
    %q = x2/p;
end
```

Q3.

```
% Both 2 and 3 don't work.
```

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