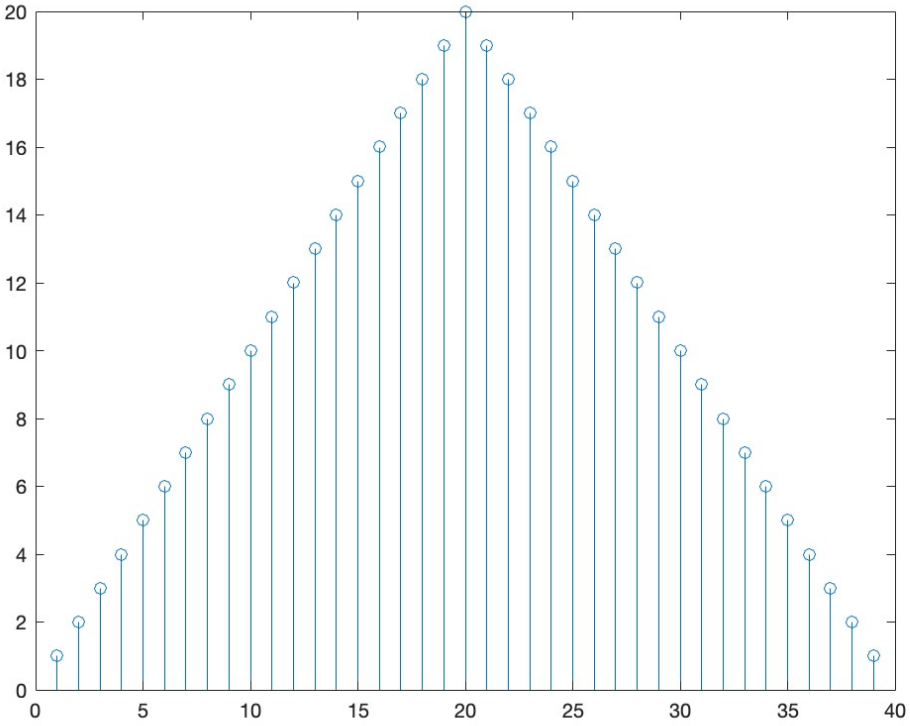
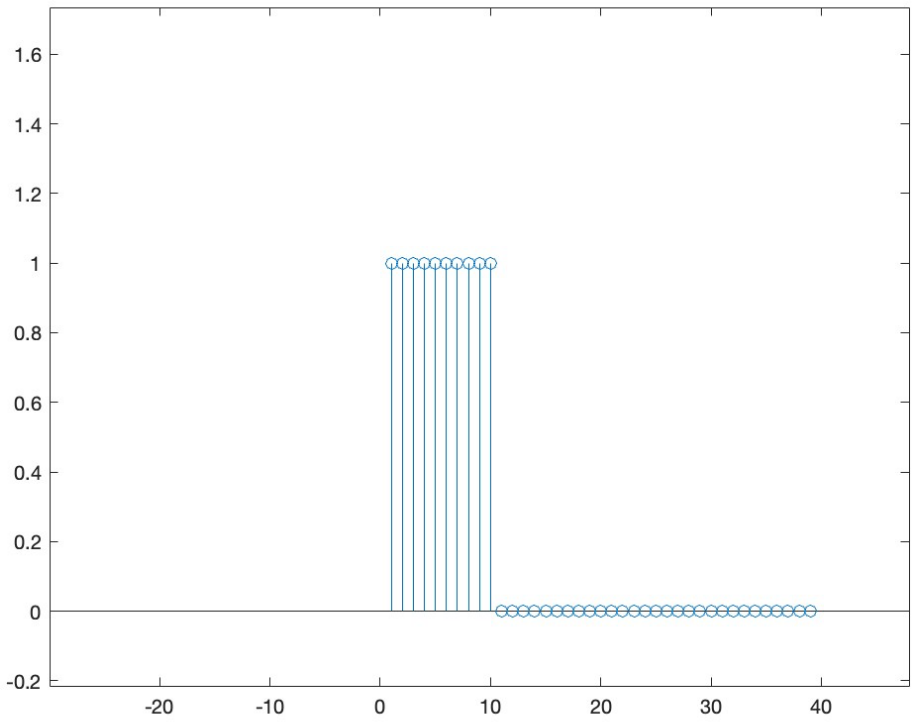
B12901075_myconv.m

```
1   clear all; clc;
2   n = 1 : 39;
3   x1 = (n).*(n<=20 & n>=1)+(40-n).*(n>20 & n<=39);
4   x2 = (n<11 & n>=1);
5   figure(1)
6   stem(n, x1)
7   figure(2)
8   stem(n, x2)
9   %%
10  %hold on
11  y = conv(x1,x2);
12  stem(y);
```

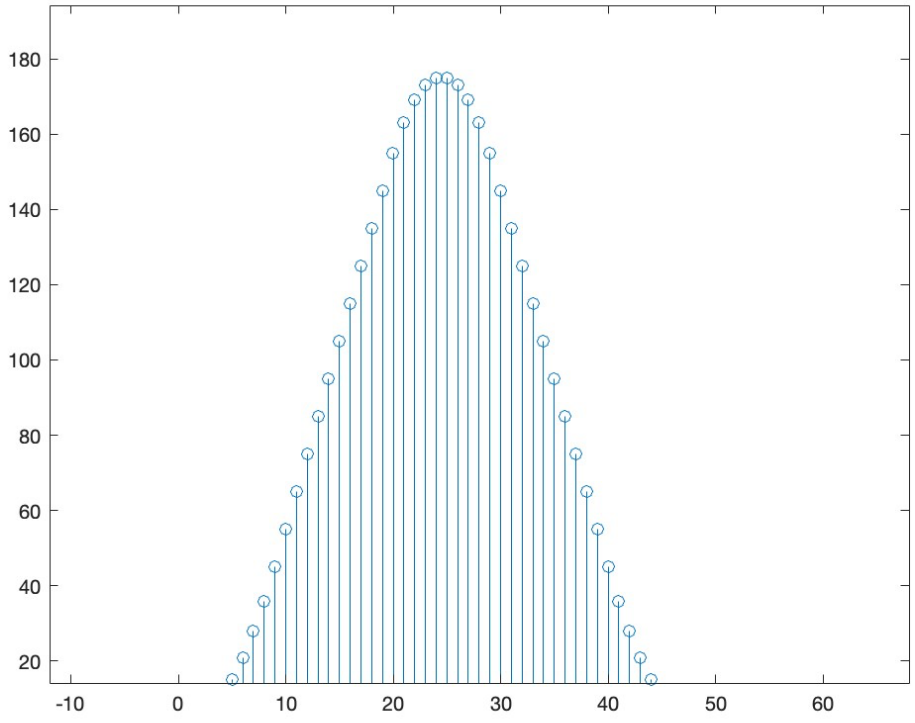
(a)X1



(a)X2


1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
-0.2
-20
-10
0
10
20
30
40

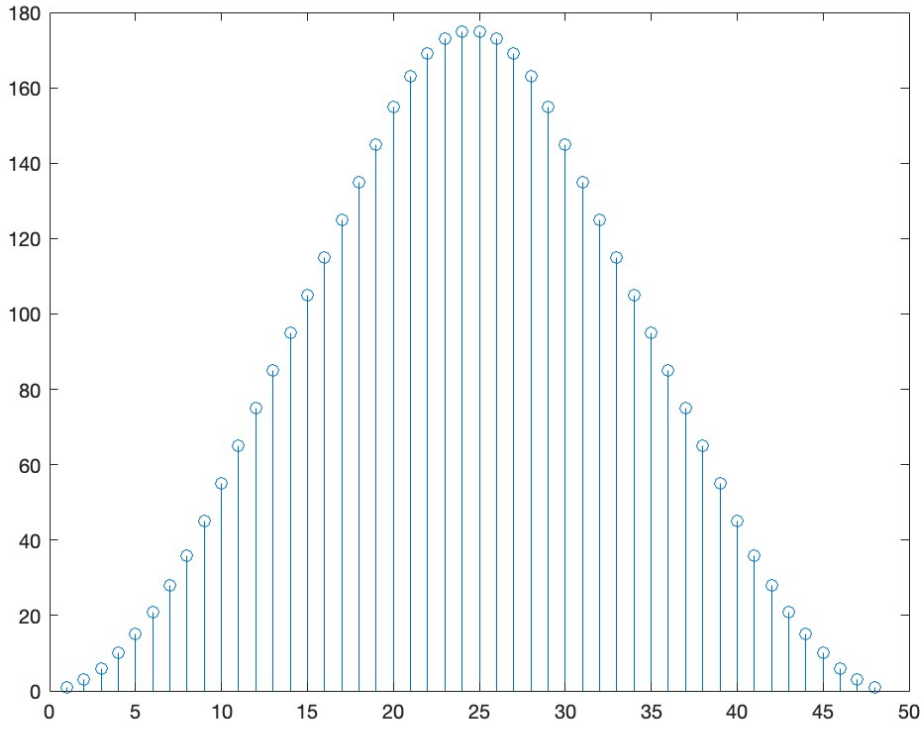
(b)Y1


180
160
140
120
100
80
60
40
20
-10
0
10
20
30
40
50
60

(c)Matrix-y1

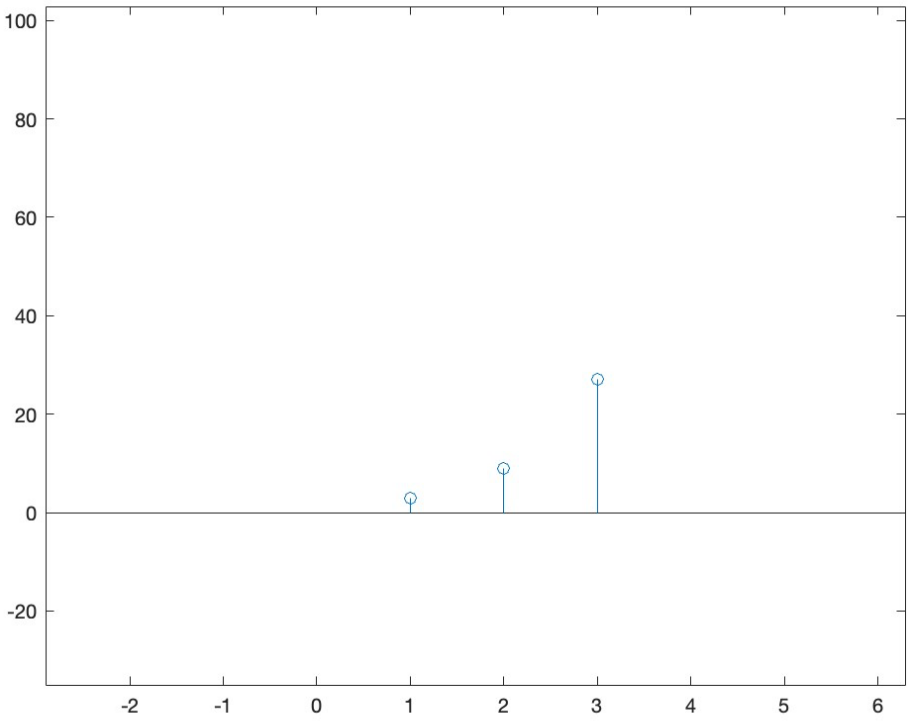
```
%%
clear all; clc;
X2(1:10)=1;
X1(1:39)=0;
for i=1:39
    if i<=20 && i>=1
        X1(i)=i;
    else i>20 & i<= 39;
        X1(i)=40-i;
    end
end
A(1:48,1:10)=0;
for i =1:10
    for j = 1:48
        if j>=i && j-i+1<=39
            A(j,i)=X1(j-i+1);
        end
    end
end
X2=transpose(X2);

mat = A*X2;
stem(mat);
```

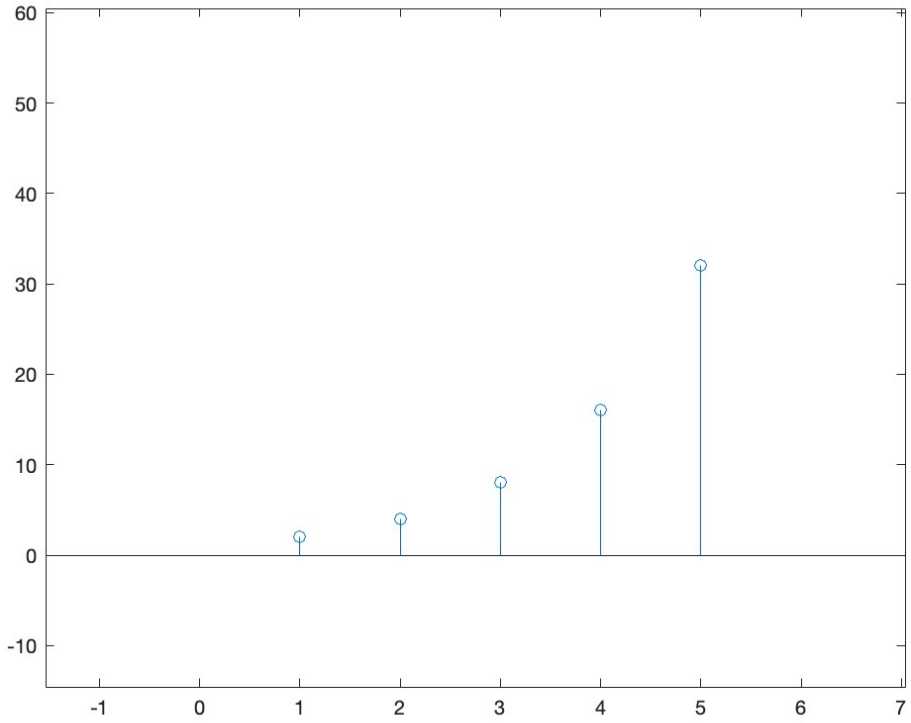


```
36      %%
37      clear all; clc;
38      n = 1 : 3;
39      x1 = (3.^n).*(n<=3 & n>=1)
40      figure(1)
41      stem(n, x1)
42      n = 1 : 5
43      x2 = (2.^n).*(n<11 & n>=1) ;
44
45      figure(2)
46      stem(n, x2)
47      %%
48      hold on
49      y = conv(x1,x2);
50      stem(y);
```

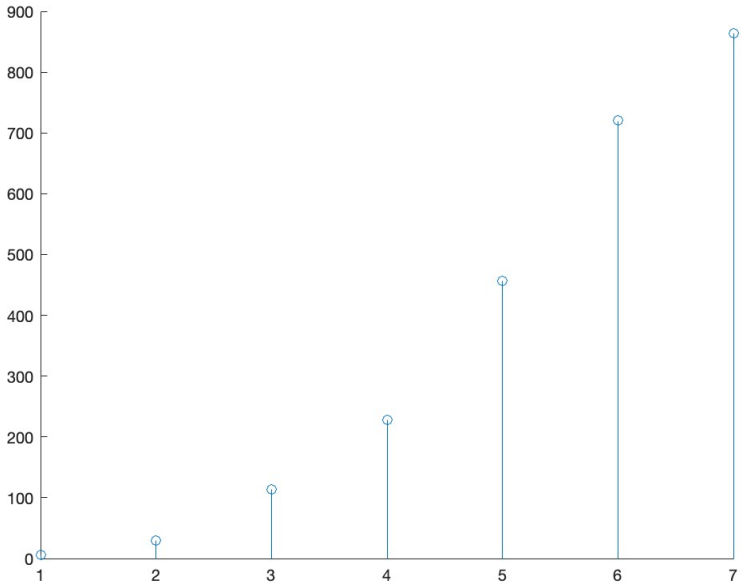
(d-a) X1



(d-a)X2


60
50
40
30
20
10
0
-10
-1
0
1
2
3
4
5
6
7

(d-b) y


900
800
700
600
500
400
300
200
100
0
1
2
3
4
5
6
7

```
%%
clear all; clc;
X2(1:5)=1;
X1(1:3)=0;
for i=1:5
    if i<=3
        X1(i)=3^i;
        X2(i)=2^i
    else i>3;
        X2(i)=2^i
    end
end
A(1:7,1:5)=0;
for i =1:5
    for j = 1:7
        if j>=i && j-i+1<=3
            A(j,i)=X1(j-i+1);
        end
    end
end
X2=transpose(X2);
mat = A*X2
stem(mat);

```

(d-c) matrix y