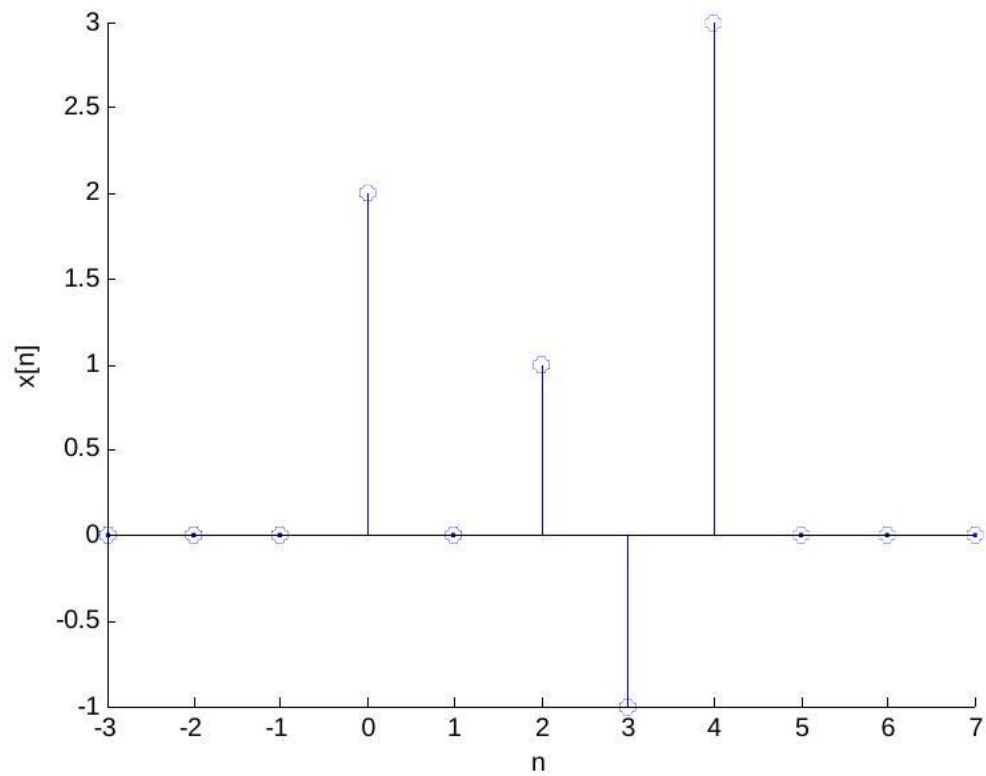


1.3)

a)

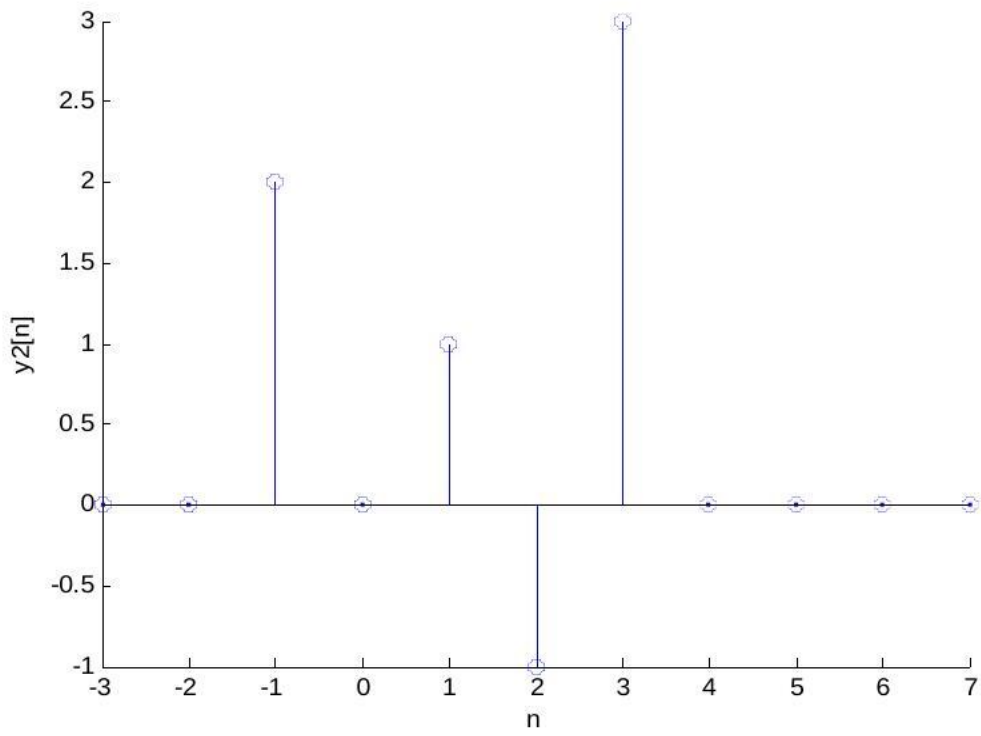
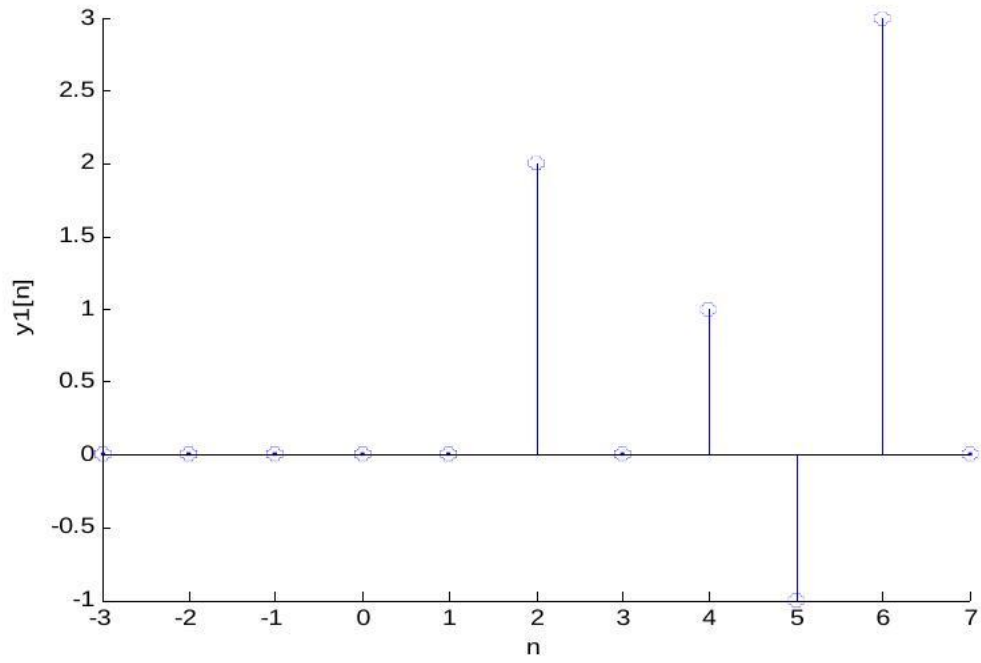
```
n=-3:1:7;  
x=[0 0 0 2 0 1 -1 3 0 0 0];  
stem(n,x);
```



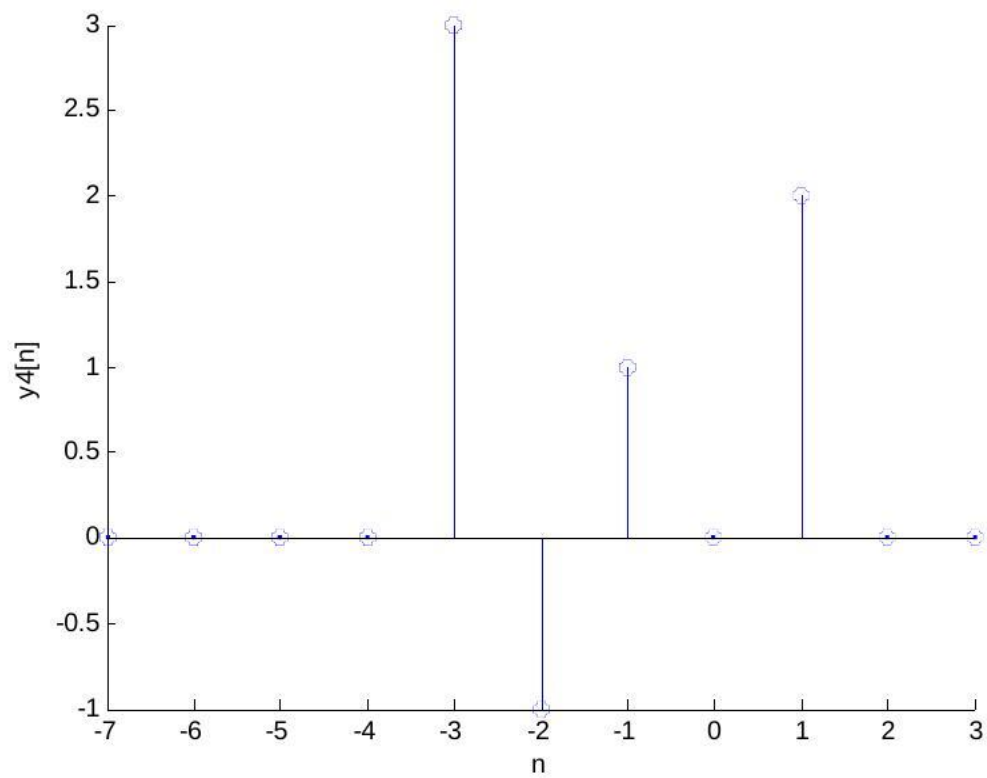
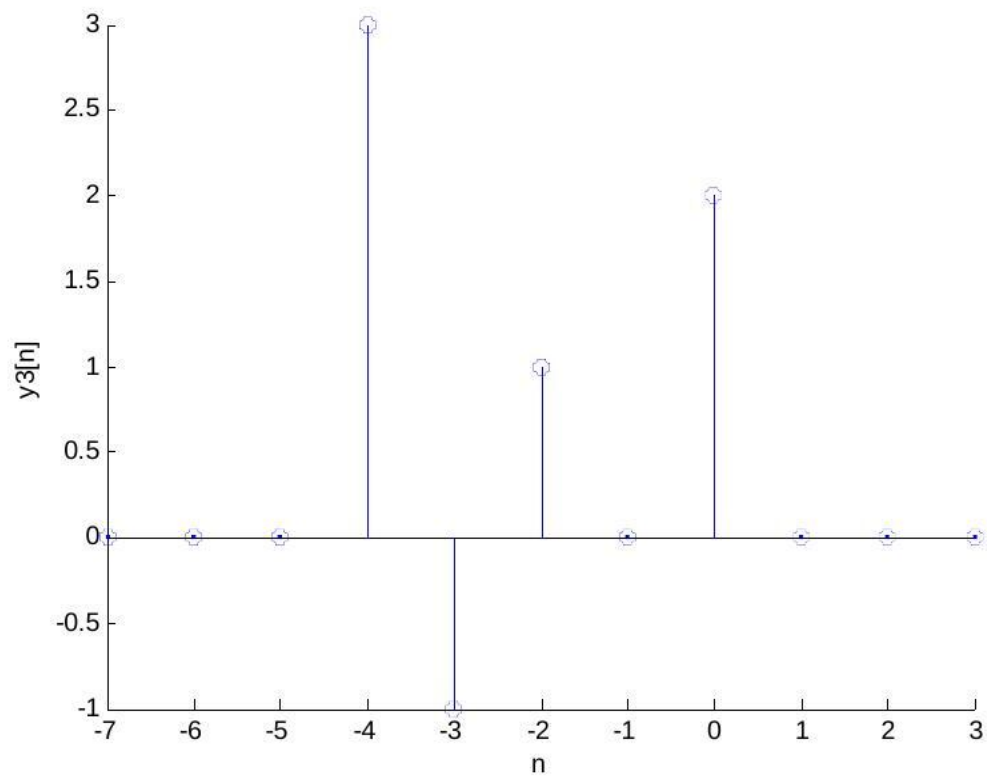
b)

```
y1[n]=[0 0 0 0 0 2 0 1 -1 3 0] , n= -3 ->7  
y2[n]=[0 0 2 0 1 -1 3 0 0 0 0] , n= -3 ->7  
y3[n]=[0 0 0 3 -1 1 0 2 0 0 0] , n= -7 ->3  
y4[n]=[0 0 0 0 3 -1 1 0 2 0 0] , n= -7 ->3
```

c)



y_3 ve y_4 de, n negatif olduğu için zaman aralığı olan “ n ” de -7 ve 3 arasında değiştirilecektir:



2.1)

a)

$$y[n] = x[0].x[n-0] + x[1].x[n-1] + x[2].x[n-2] + x[3].x[n-3] + x[4].x[n-4] + x[5].x[n-5]$$

$$y[0]=1, y[1]=2, y[2]=3, y[3]=4, y[4]=5, y[5]=6, y[6]=5, y[7]=4, y[8]=3, y[9]=2, y[10]=1$$

b)

```
x=[1 1 1 1 1 1]
```

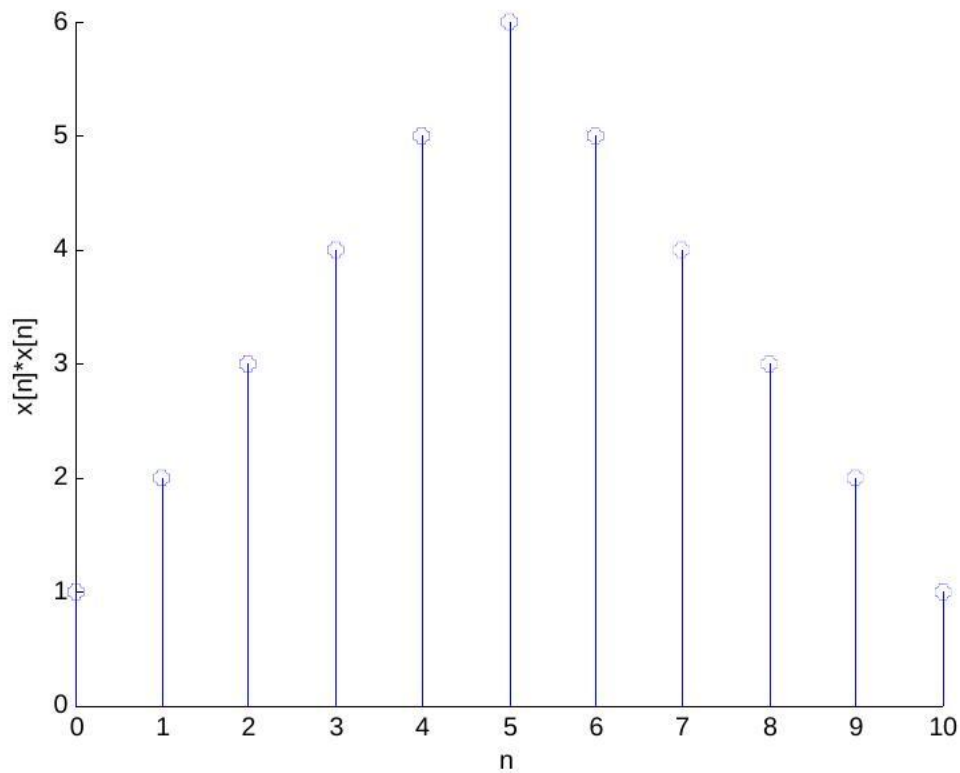
```
y=conv(x,x)
```

```
n=0:1:5
```

```
z=length(n)
```

```
ny=0:1:(2*z-2)
```

```
stem(ny,y)
```



c)

```
x=[1,1,1,1,1,1]
```

```
h=0:1:5
```

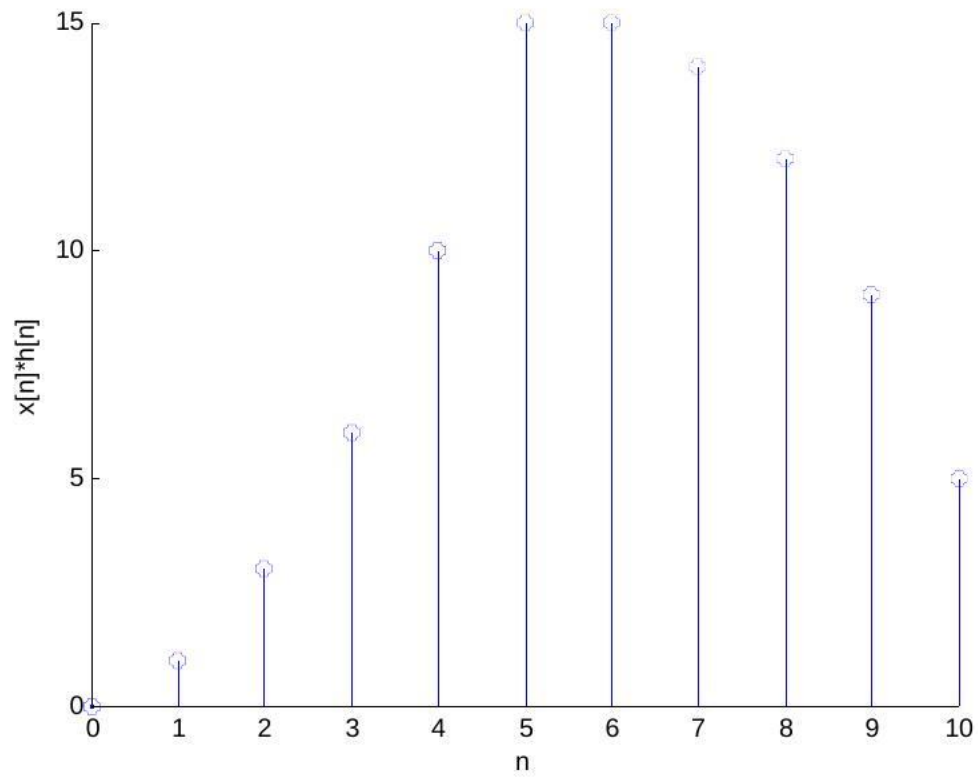
```
n=0:1:5
```

```
z=length(n)
```

```
ny=0:1:((z.*2)-2)
```

```
y=conv(x,h)
```

```
stem(ny,y)
```



d)

```
x=[1,1,1,1,1,1]
```

```
h=0:1:5
```

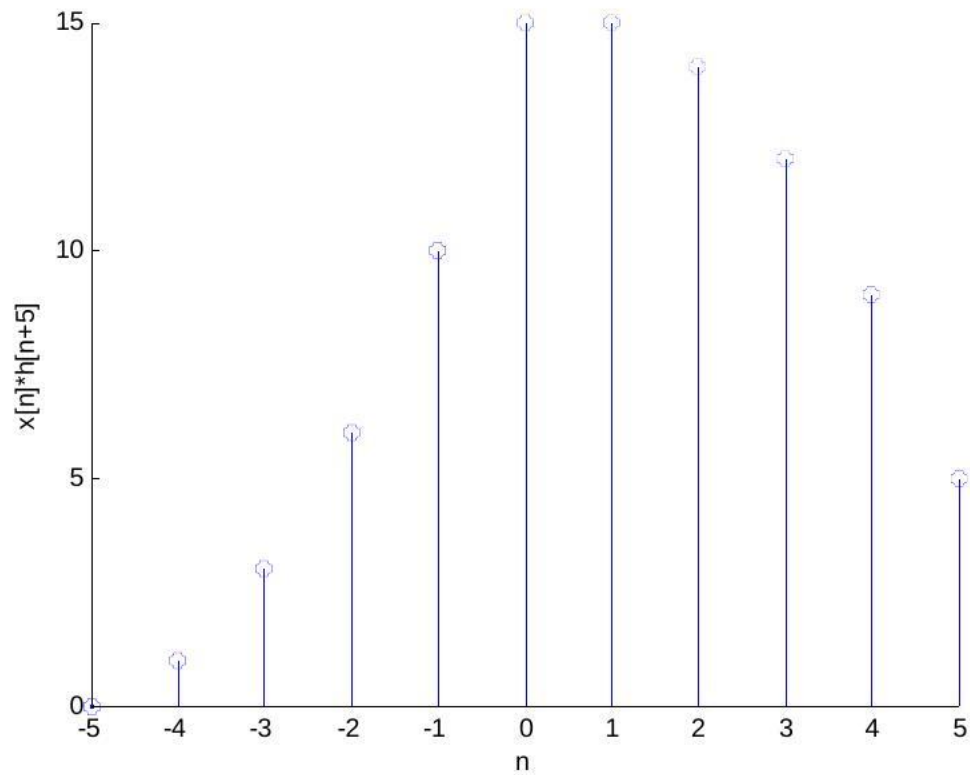
```
n=-5:1:0
```

```
z=length(n)
```

```
ny=0:1:((z.*2)-2-5)
```

```
y=conv(x,h)
```

```
stem(ny,y)
```



2.2)

a) $a1=[1], b1=[0.5, 1, 2]$

b) $a2=[1], b2=[2, 0.8]$

c) $a3=[1, -0.8], b3=[0, 2]$

d)

```
>> x=[1,2,3,4]
```

x =

```
1 2 3 4
```

```
>> y1=filter(b1,a1,x)
```

y1 =

```
0.5000 2.0000 5.5000 9.0000
```

```
>> a2=[1 -0.8];
```

```
>> b2=[2];
```

```
>> y2=filter(b2,a2,x)
```

y2 =

```
2.0000 5.6000 10.4800 16.3840
```

```
>> y3=filter(b3,a3,x)
```

y3 =

```
0 2.0000 5.6000 10.4800
```

2.7)

a)

```
y[-1]=h[-1]*x[0]=2
```

```
y[0]=h[0]*x[0]+h[-1]*x[1]=0+0=0
```

```
y[1]=h[-1]*x[2]+h[0]*x[1]+h[1]*x[0]=2+0-2=0
```

```
y[2]=h[1]*x[1]+h[0]*x[2]=0+0=0
```

```
y[3]=h[1]*x[2]=-2
```

```
x=[1 0 1]
```

```
nx=0:1:2
```

```
h=[2 0 -2]
```

```
nx=0:1:2
```

```
nh=-1:1:1
```

```
a1=length(nx)
```

```
a2=length(nh)
```

```
ny=-1:1:(a1+a2-2-1)
```

```
y=conv(x,h)
```

```
stem(ny,y)
```

