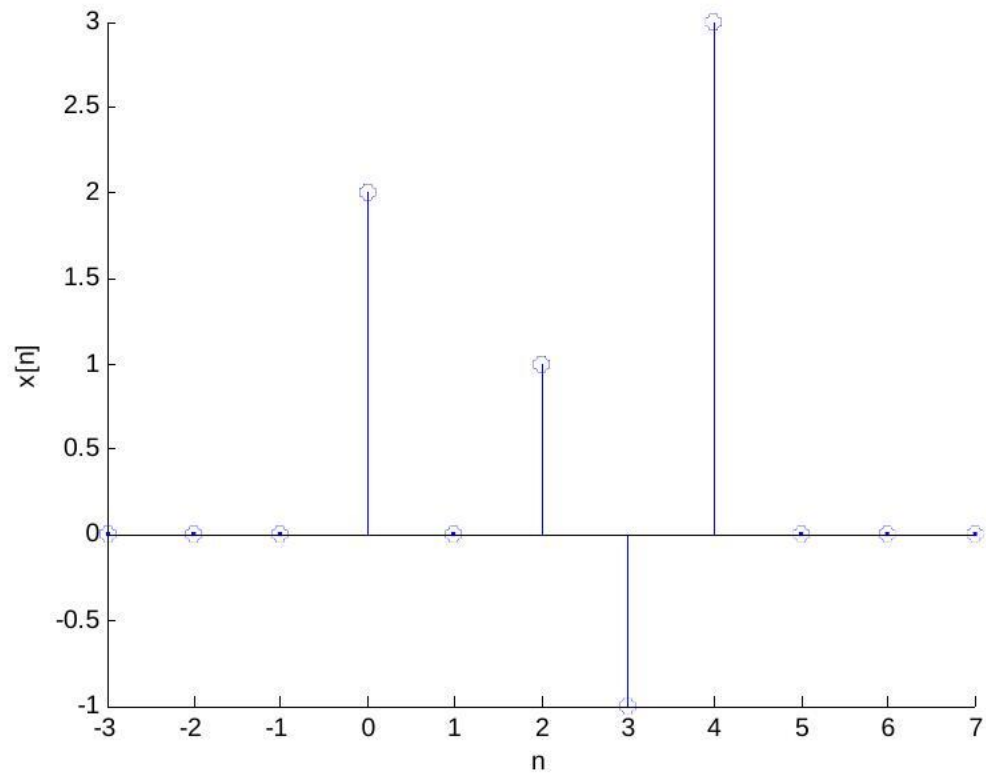


1.3.

a)

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

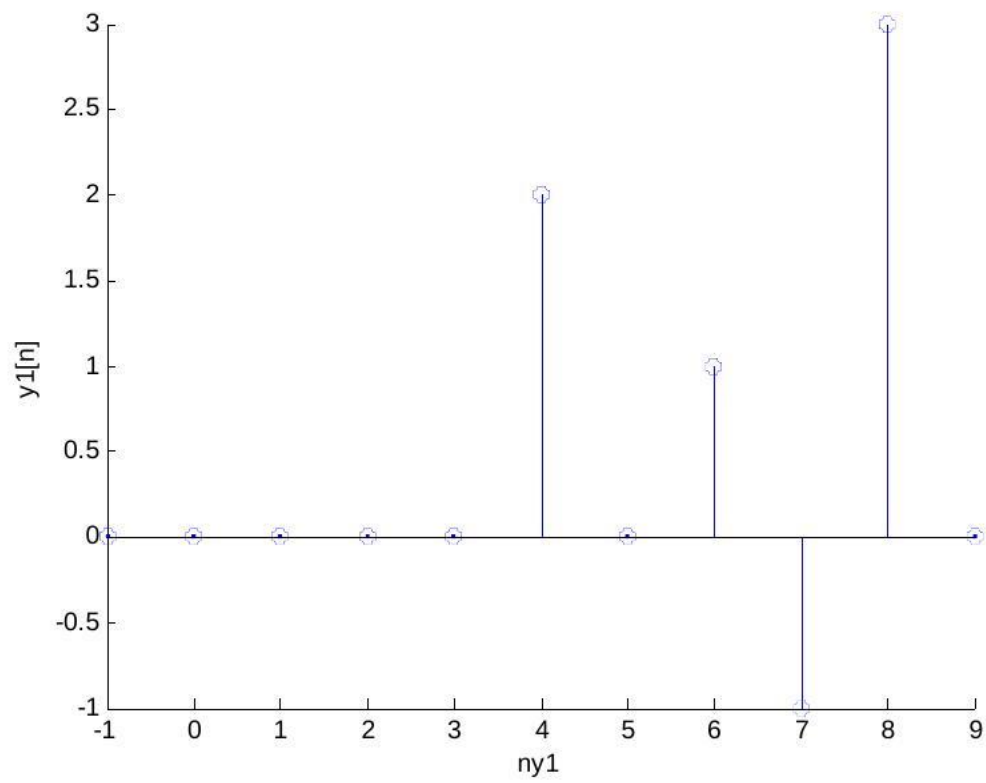


1.3.

b,c)

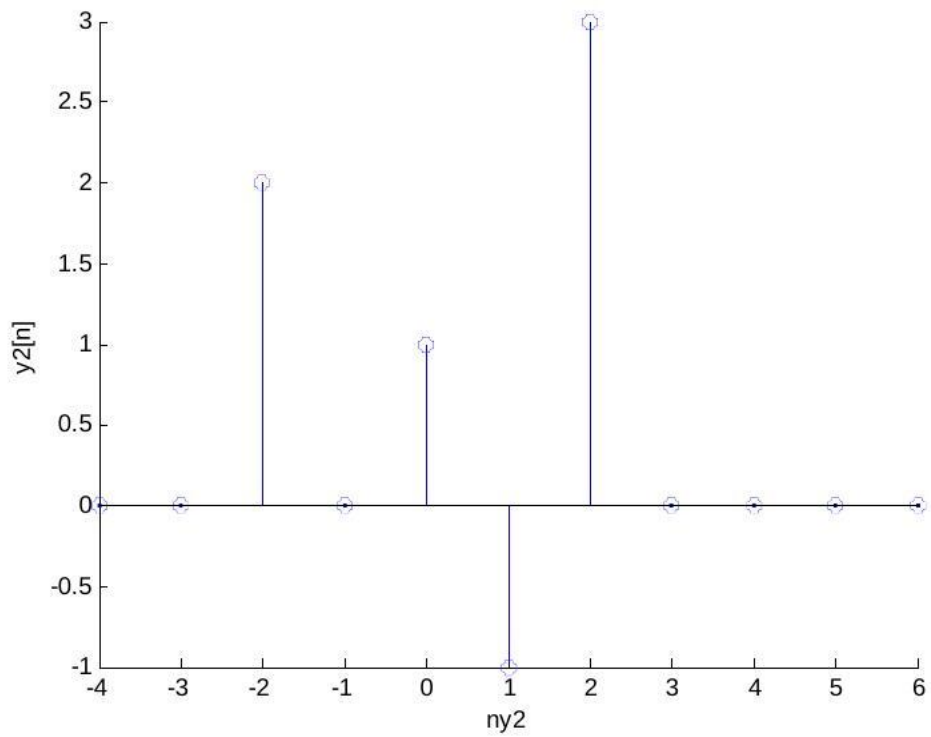
```
ny1=-1:1:9;  
ny2=-4:1:6;  
ny3=-3:1:7;  
ny4=-4:1:6;  
y1=[0 0 0 0 0 2 0 1 -1 3 0];  
y2=[0 0 2 0 1 -1 3 0 0 0 0];  
y3=[-1 1 0 2 0 0 0 0 0 0 0];  
y4=[3 -1 1 0 2 0 0 0 0 0 0];
```

stem(ny1,y1)



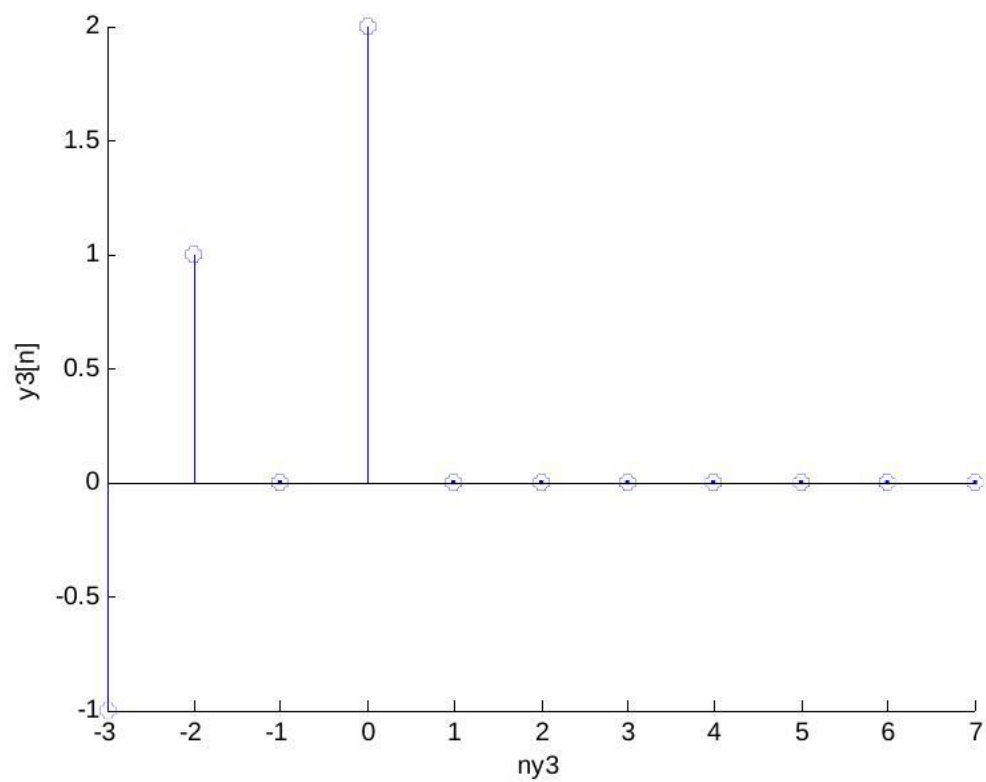
Delayed by 2.

stem(ny2,y2)



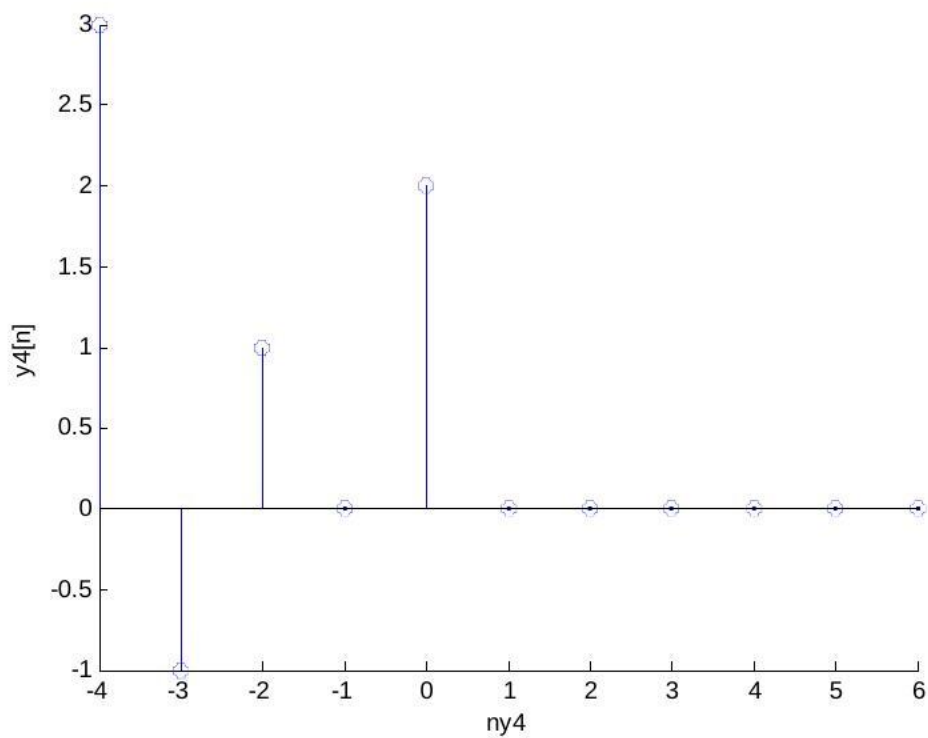
Advanced by 1.

stem(ny3,y3)



Flipped.

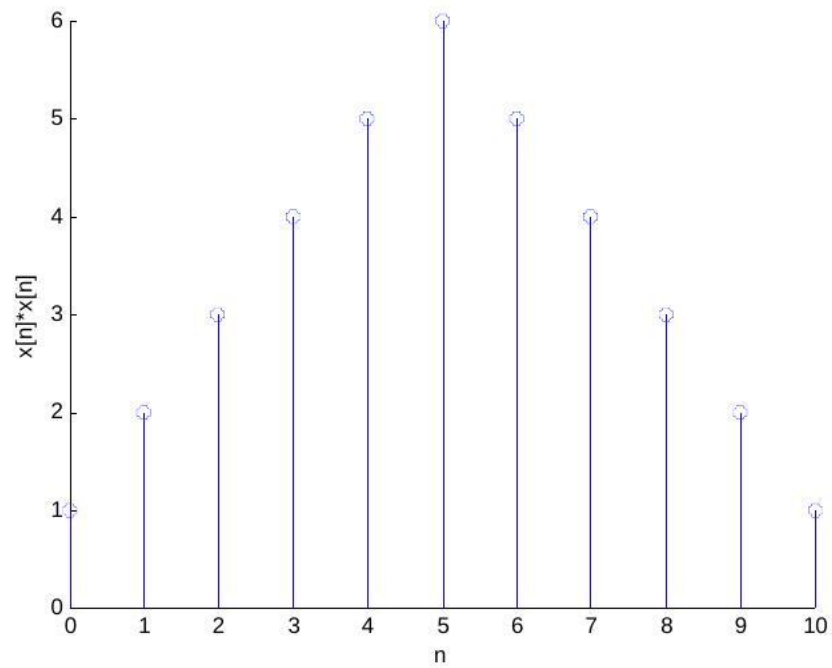
stem(ny4,y4)



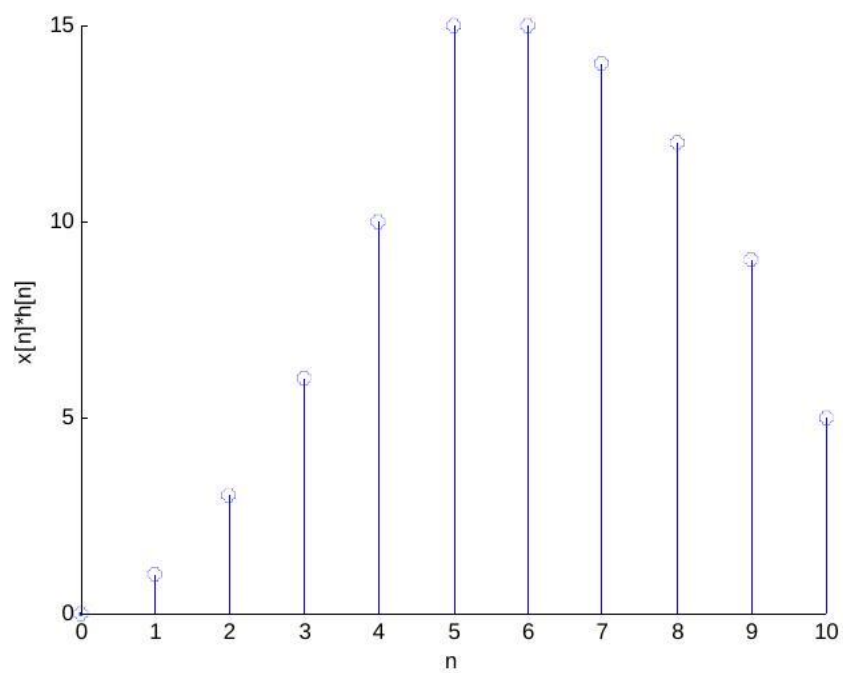
Flipped and Advanced by 1.

2.

a) `n=0:1:10;`
`y=conv(x,x);`
`ny=n;`
`stem(ny,y)`



b) `n=0:1:10;`
`h=[0 1 2 3 4 5];`
`y=conv(x,h);`
`stem(ny,y)`



2.2.(tutorial).
including part d);
a)

```
a1=[1];  
b1=[0.5 1 2];
```

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

y1 =

```
2    0   -2   12
```

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

y1 =

```
0.5000    2.0000    5.5000    9.0000
```

b)d)

```
a2=[1]  
b2=[0.8 2]
```

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

y2 =

```
2.0000    5.6000   10.4800   16.3840
```

c)d)

```
b3=[1 -0.8];  
a3=[0 2];
```

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

y3 =

```
0    2.0000    5.6000   10.4800
```

2.7.

a)

```
h=[0 2 0 -2 0];  
x=[0 0 1 0 1];  
y=conv(h,x);  
ny=1:1:9;  
stem(ny,y);
```

