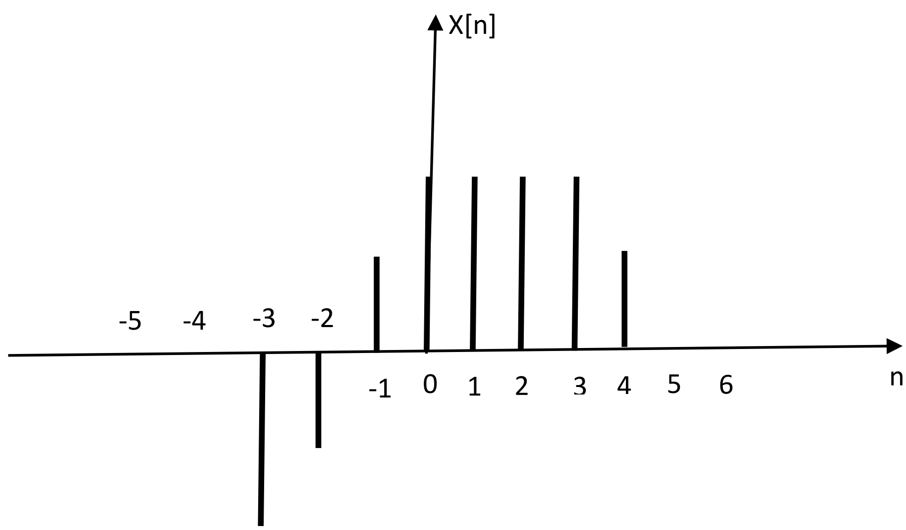
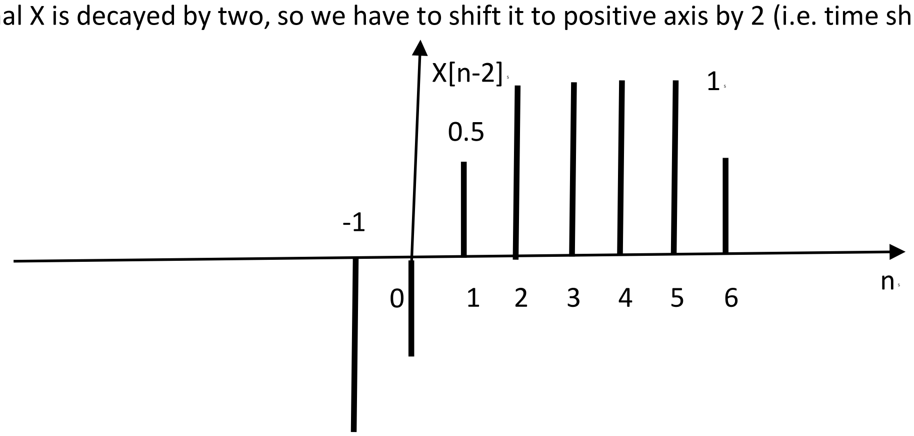
a. **X[n-2]**
b. **X[2-n]**
c. **X[n/2]**
d. **X[2n]**
e. **X[3n-1]**
f. **X[n].u[2-n]**
g. **X[-n+1]**



Precedence Rule:

Always perform **time shifting** before **scaling** or **inversion.**

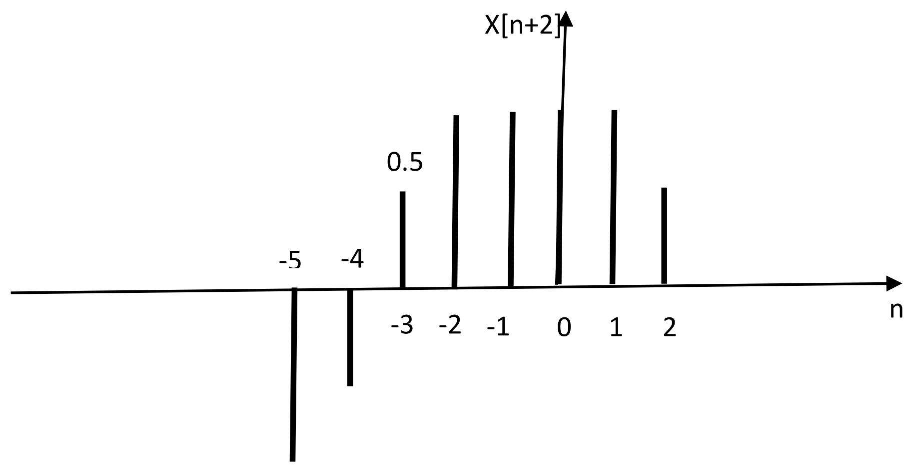
a. **X[n-2]**
The signal X is decayed by two, so we have to shift it to positive axis by 2 (i.e. time shifting)



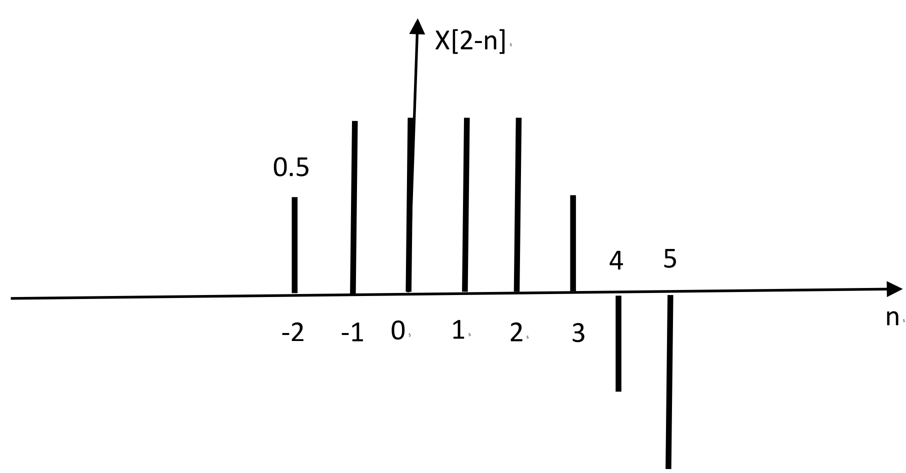
b. X[2-n]

Both time shifting and inversion is present.

First Step: According to Precedence's Rule, apply time shifting by +2 (i.e. shift it to negative X-axis by 2)

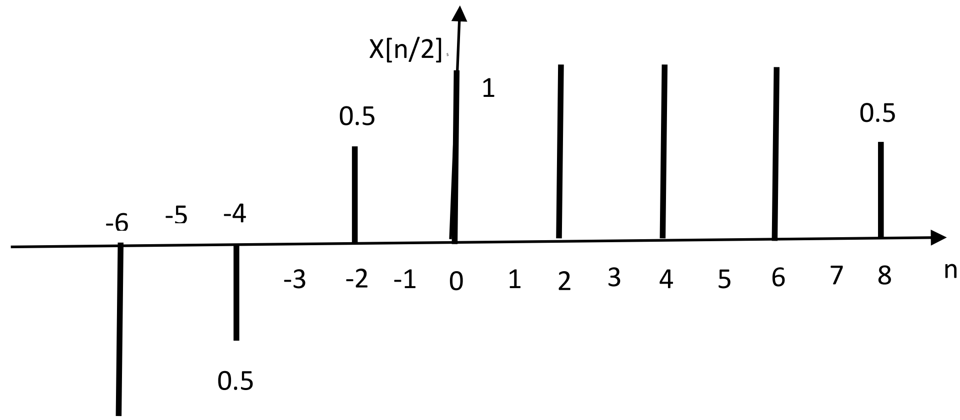


Second Step: Now apply inversion to the above expression [-n]



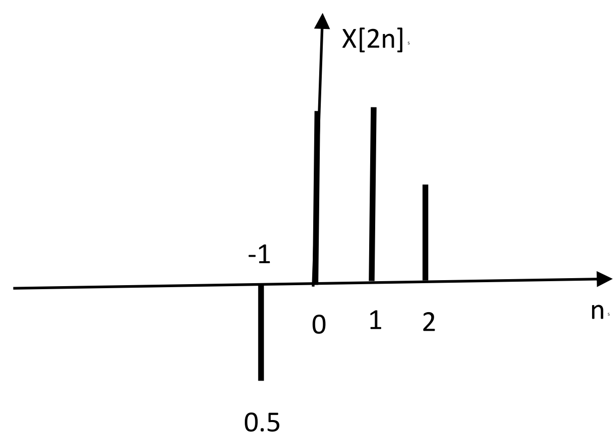
c. X[n/2]

The signal is scaled by double i.e. 2n, so we have to expand the signal in X-axis by double.



d. X[2n]

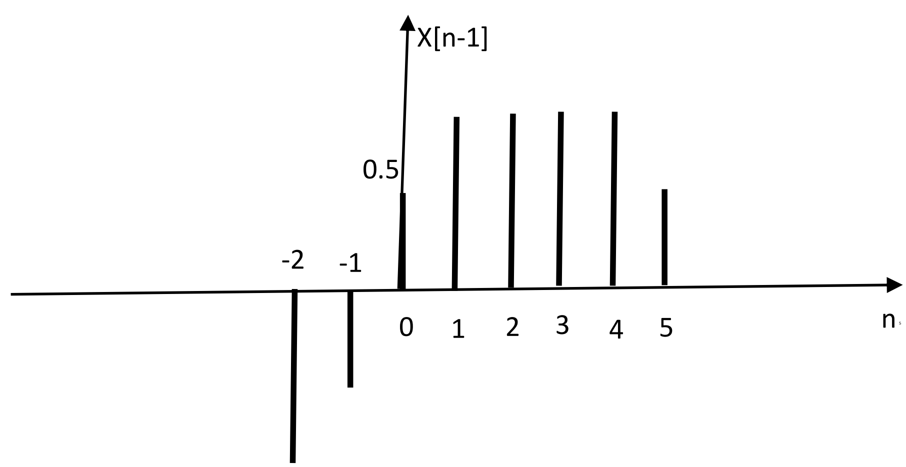
The signal is scaled down by n/2



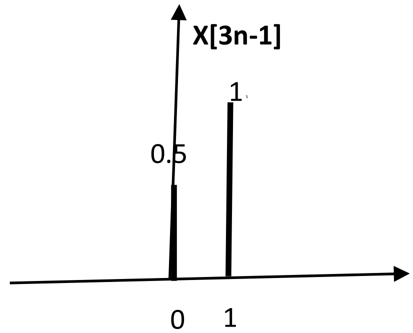
e. X[3n-1]

Both time shifting and scaling are present

First Step: Following precedence's Rule, we will apply time shifting first (i.e. X[-1])



Second Step: We will apply scaling factor X[3n].

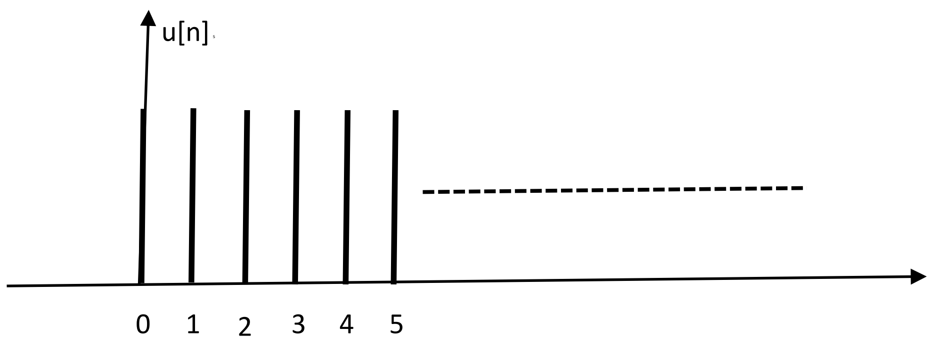


f. X[n].u[2-n]

Here the signal "**u**" is a unit signal.

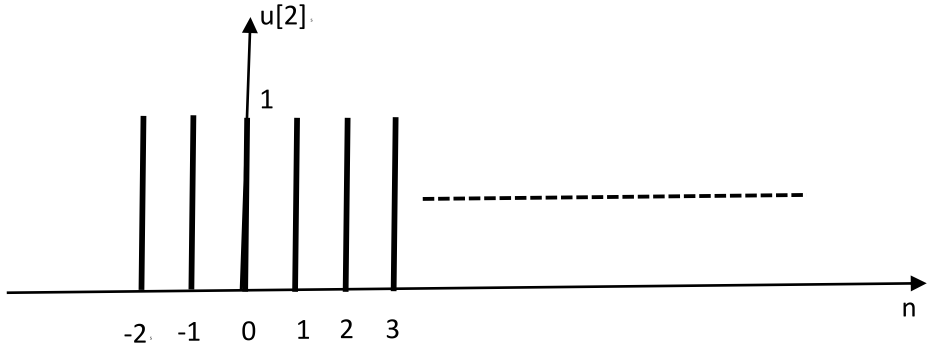
Let **u[n]** ranges from 0 to infinity.

The graphical representation of **u[n]** looks like.

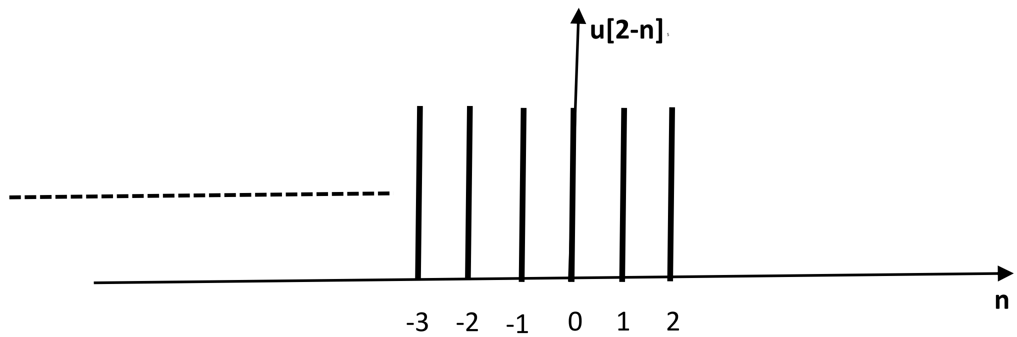


Let's apply time shifting and inversion in the unit signal

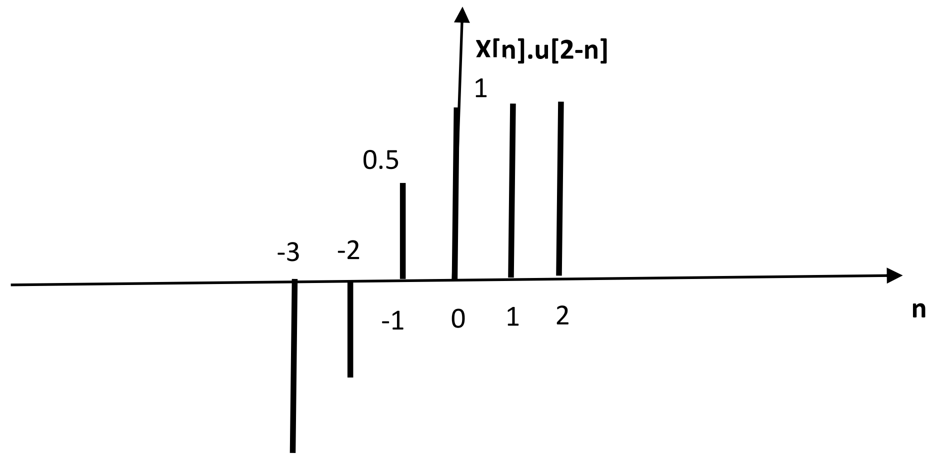
First Step: We will apply **time shifting u[2]**, as per Precedence's Rule



Second Step: Now we will apply **Time inversion u[-n].**



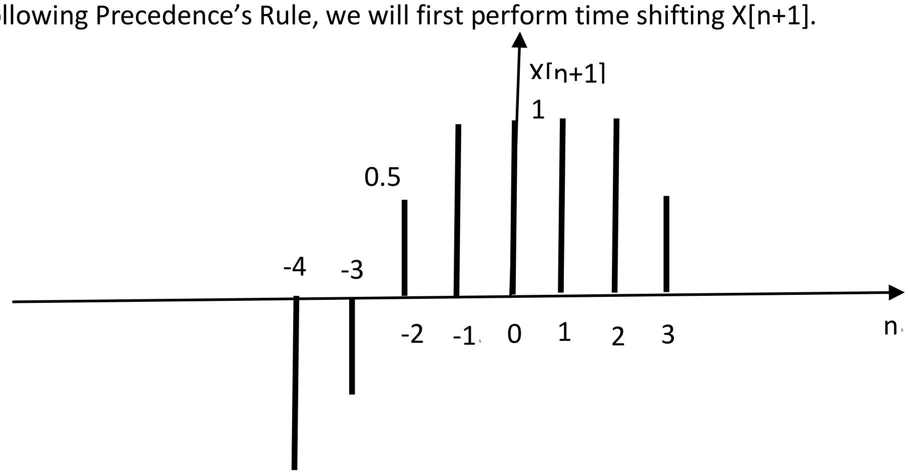
Third Step: Now we will multiply X[n] and u[2-n], We will get,



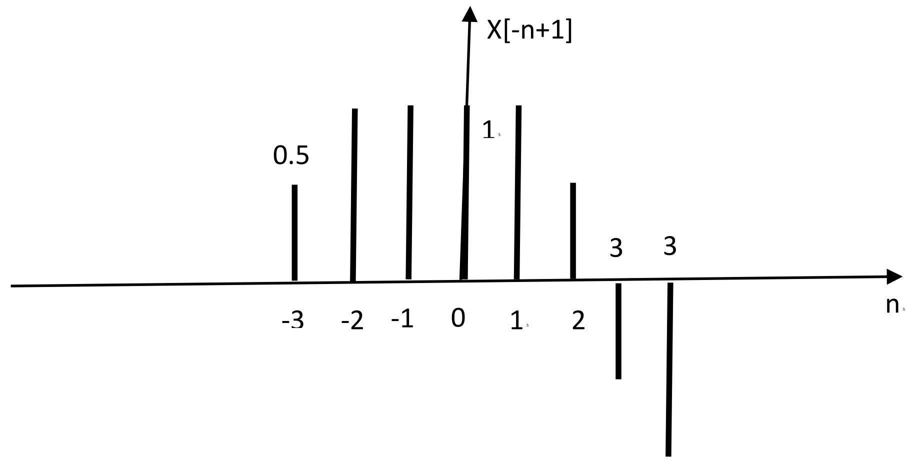
g. **X[-n+1]**

Both time shifting and inversion are involved in this signal.

First Step: Following Precedence's Rule, we will first perform time shifting X[n+1].



Second Step: Now we will perform time inversion X[-n+1].


X[-n+1]
1
0.5
3
3
-3
-2
-1
0
1
2
n