

Impulso y rampa

- Ejercicios, diapositiva 2

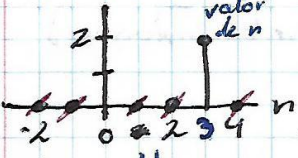
Coronado Salcedo

Impulso y Rampa

- Escribir la expresión para cada secuencia con sumas de impulsos

- $x[n]$

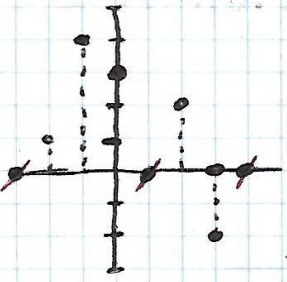
Se nos da esta tabla



Valor de "n" esta es su posición en el eje "n"

Solo tomamos los valores distintos de cero

$x[n] = 2\delta[n-3]$

↓
lo invertimos
(+3 → -3)
"1δ" es redundante e incorrecto
- $y[n]$


$y[n] = \delta[n+2] + 4\delta[n+1] + 3\delta[n] + 2\delta[n-2] - 2\delta[n-3]$

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> Escalon unitario
No utiliza valores negativos de "n"

• a) $u[3n-6] \rightarrow n = (n+6)/3$ $u=1$
(valor unitario)

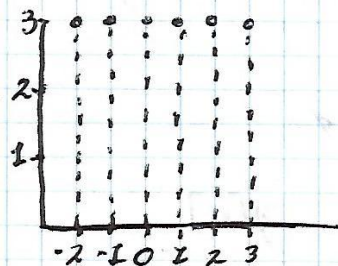
n	$(n+6)/3$	$x[n]=u$
0	2	1
1	7/3 *	1
2	8/3	1
3	3	1
4	10/3	1
5	11/3	1



* discreto = enteros unicamente

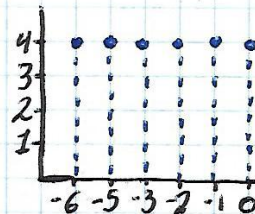
• b) $3u[n+2] \rightarrow N_{n+2}=n \therefore N_n=n-2$

n	$n-2$	$x[n]$
0	-2	3
1	-1	3
2	0	3
3	1	3
4	2	3
5	3	3



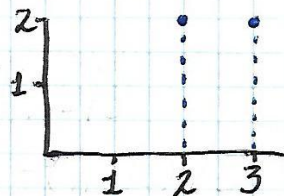
• c) $4u[-n-1] \rightarrow -N_{n-1}=n \therefore N_n=-n-1$

n	$-n-1$	$x[n]$
0	-1	4
1	-2	4
2	-3	4
3	-4	4
4	-5	4
5	-6	4



• d) $2u[-5n+15] \rightarrow -5N_n+15=n \therefore N_n = -(n-15)/5$

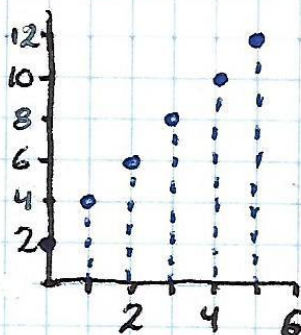
n	$-(n-15)/5$	$x[n]$
0	3	2
1	14/5	2
2	13/5	2
3	12/5	2
4	11/5	2
5	2	2



• Rampa

a) $2r[n] \rightarrow n = N_n$

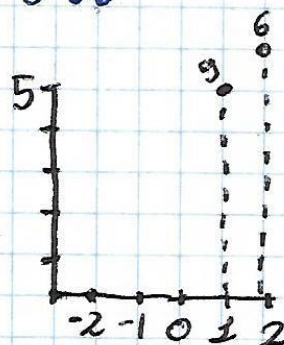
n	N_n	$x[n]$
0	0	2
1	1	4
2	2	6
3	3	8
4	4	10
5	5	12



b) $r[n+3] \rightarrow N_n = n-3$

$n=5$

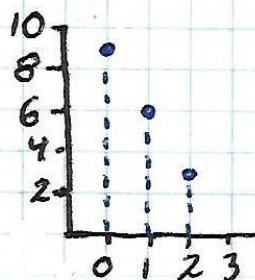
n	$n-3$	$x[n]$ impulso
0	-3	1 *
1	-2	2 **
2	-1	3 **
3	0	4 **
4	1	5
5	2	6



* no tomar el valor de $n=0$
 ** Solo graficamos $N_n \geq 1$
 columna " $n-3$ "

c) $3r[-n-2] \rightarrow -N_n-2 = n \therefore N_n = -n+2$

n	$-n+2$	$x[n]$
0	2	3
1	1	6
2	0	9
3	-1	
4	-2	
5	-3	



d) $0.5r[6n+12] \rightarrow 6n+12=n \circ (n-12)/6$

n	$(n-12)/6$	
0	-2	.5
1	-11/6	
2	-10/6	
3	-9/6	
4	-8/6	
5	-7/6	

