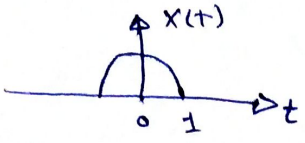
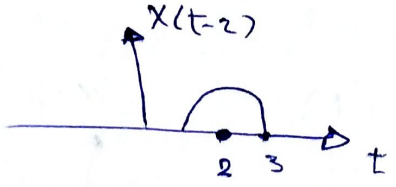
1 Transformation of indep var

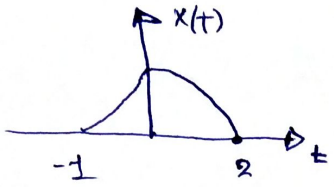
→ shift ✓

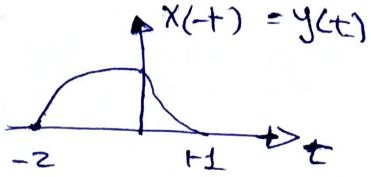
→ scaling

→ inversion ✓









exp 1

$x = [0\ 0\ 0\ 2\ 0\ 1\ -1\ 3\ 0\ 0\ 0]$

$n_x = [-3\ -2\ -1\ 0\ 1\ 2\ 3\ 4\ 5\ 6\ 7]$ $\quad n_x = [-3:7]$

stem(n_x, x)

$y = x[n-2]$ → stem(n_x+2, x)

$y[n] = x[-n+1]$ 2 operation → shift + inversion

$z[n] = x[n+1]$ → $n_{new\,axis} = n_x - 1$

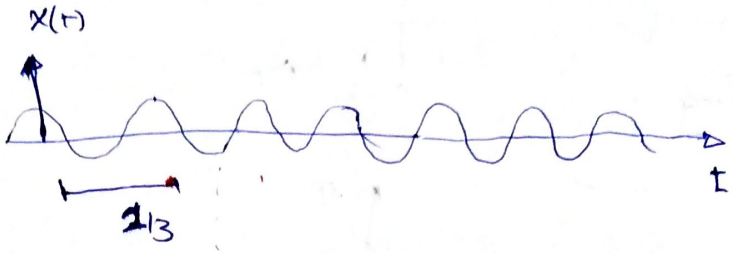
↓ inversion

$n \to -n$

$y[n] = x[-n+1]$ → $k_{new\,axis} = -m$

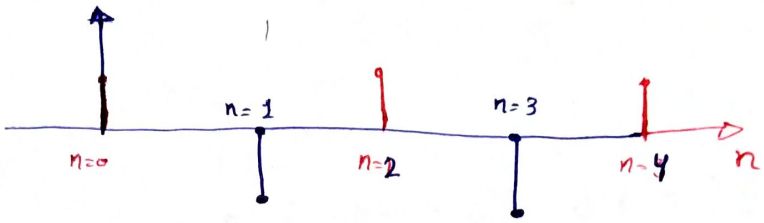
2 Periodicity of discrete time signals

$X(t) = \cos(3\pi t)$



$T = \frac{2\pi}{\omega} = \frac{2}{3}$

$X[n] = \cos(3\pi n)$



Cond of Periodicity $\frac{\Omega}{2\pi} = \frac{m}{N}$ → must be integre

$\frac{3\pi}{2\pi} = \frac{3}{2}$ → # of periods in continous domain

→ # of samples in discrete period

$N = 2$

For periodic signal → Energy = infinite

Power = Finite = power of one period

For Aperiodic signal → Energy = Finite

Power = 0