③ • Para encontrar $x3(n)$, descobriremos $X3[K]$ e depois faremos DFT inversa.

$N=8$

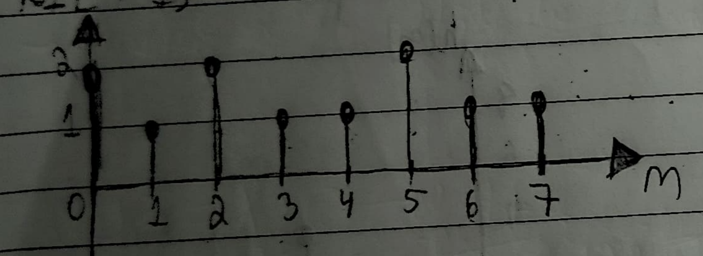
$$x3[n] = x1[n] \circledast_8 x2[n] \iff X3[K] = X1[K]X2[K]$$

$$X2[K] = 1e^{-\frac{jK2\pi}{8}} + 3e^{-\frac{jK2\pi}{8}\cdot 2} + 2e^{-\frac{jK2\pi}{8}\cdot 3}$$

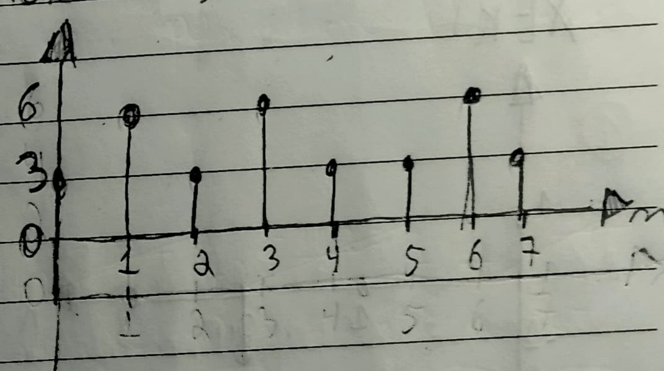
$$X3[K] = X1[K]e^{-\frac{jK2\pi}{8}} + 3e^{-\frac{jK2\pi}{8}\cdot 2} + 2e^{-\frac{jK2\pi}{8}\cdot 3}$$

$$x3[n] = (x1[n-1] + 3x[n-2] + 2x[n-3])\,\mathrm{mod}\,8$$

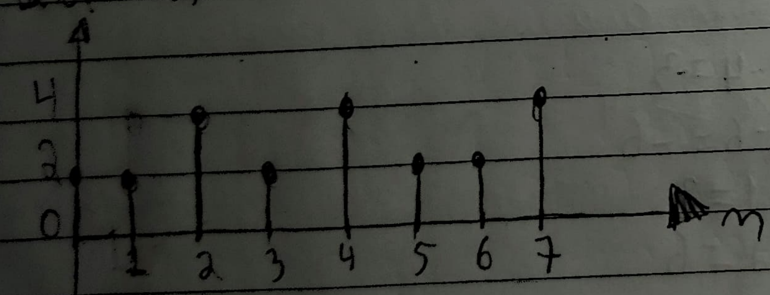
$x1[m-1]$



$3x1[m-2]$



$3x(m-2)$



$$x3[n] = (2+3+2)\delta(n) + (1+6+2)\delta(n-1) + (2+3+4)\delta(n-2) + (1+6+2)\delta(n-3) + (1+3+4)\delta(n-4) + (2+3+2)\delta(n-5) + (1+6+2)\delta(n-6) + (1+3+4)\delta(n-7)$$

$$x3[n] = 7\delta(n) + 9\delta(n-1) + 9\delta(n-2) + 9\delta(n-3) + 8\delta(n-4) + 7\delta(n-5) + 9\delta(n-6) + 8\delta(n-7) \quad \therefore \quad x3[2] = 9$$