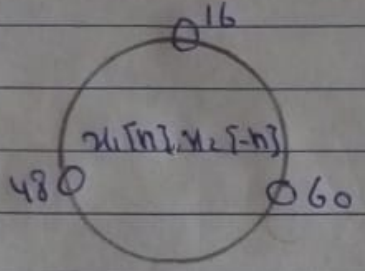
Date: _____ 2

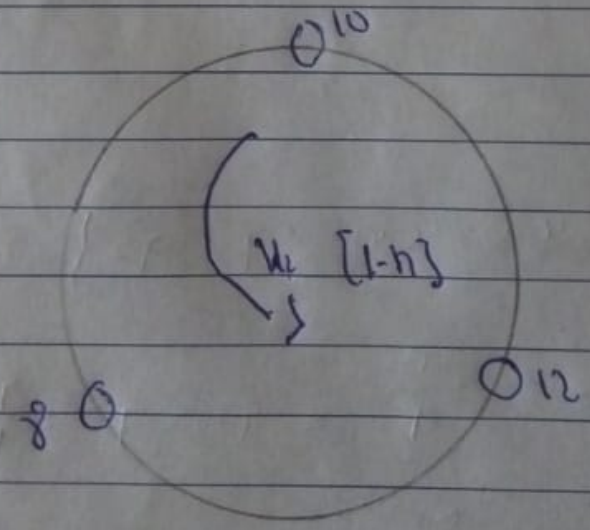
Page = 11 ID = 6988

multiplication



multiply $x_1[n]$ and $x_2[n]$.

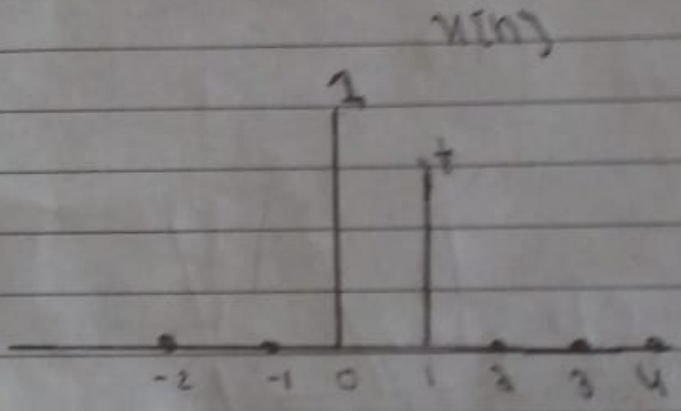
Now shift the folding set (anti clockwise)



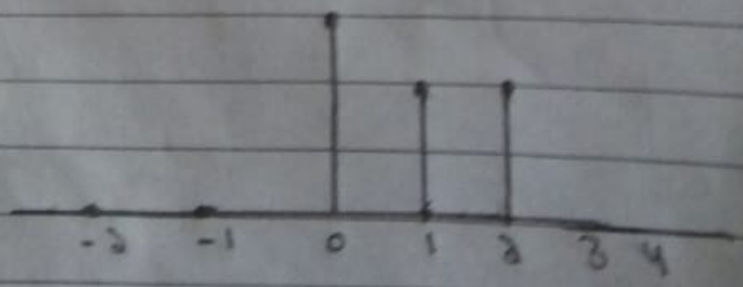
Date:_____ Page = 9 = ID = 6987

Q = Question Number = "4.."

$$x[n] = \left(\frac{1}{3}\right)^{n-1} u[n-1]$$



$$\Rightarrow x[n] = \delta[n] + \delta[n-1] + \delta[n-2]$$



Date:_____

or $e^{-j(\pi/2)} = \cos \pi/2 - j \sin \pi/2$

$= \boxed{-j}$

$$C_k = \frac{1}{6} \sum_{n=0}^{6-1} x[n] (-j)^{kn}$$

$$C_k = \frac{1}{6} \sum_{n=0}^{5} x[n] (-j)^{kn}$$

$k=0$, $C_0 = \frac{1}{6} \sum_{n=0}^{5} x[n](1)$

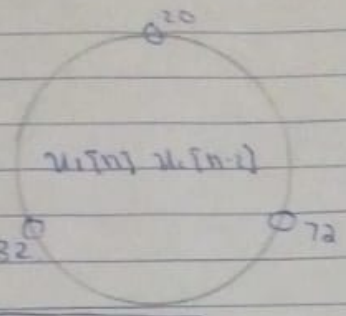
$C_0 = \frac{1}{6}[\quad]$

$C_0 = \frac{1}{6} [x[7] + x[8] + 8x[4] + x[3] + x[2] + x[6]$.

$C_0 = \frac{1}{6} [7 + 8 + 4 + 3 + 2 + 6] = \frac{31}{6}$

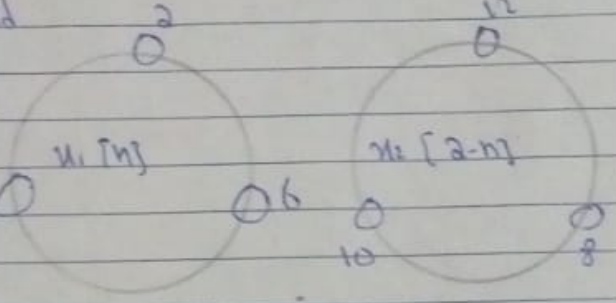
Page = 12 ID = 6988

multiplication



Sum $y[1] = 124$

Second

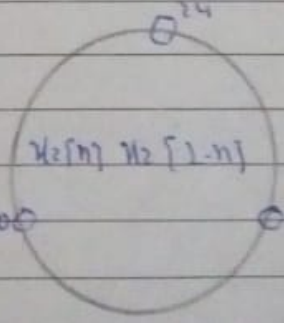


4

Date:

Page = 13 ID = 6988

multiplication



Sum = $y(2) = 112$

$y[n] = [124, 124, 112]$

Date: _____ Page = 4

$C_2 = \frac{-1}{7} + \frac{j}{23}$

1st property

$C_k + N_0 = C_{k_1}$

$C_1 + 4 = C_1$

2nd property

$C_{-k} = C_{N_0 - k} = C_k^*$

$\Rightarrow C_{4-1} = C_1^*$

$C_3 = C_1^*$

$\frac{-1}{7} - \frac{1}{23} j = \frac{-1}{7} + \frac{1}{23} j$

ID= 6988 Page = 05

Question = No = 2

Solution =>

$x[n] = [6, 9, 88]$

=> $x(0)\,\delta[n-0] + x(1)\,\delta(n-1) + x[2].\delta[n-2] + x(3)\,\delta[n-3] + x(4)\,\delta[n-4]$

=> $\delta[n] + \delta[n-6] + 9\delta[n-2] + 8\delta[n-5] + 8\delta[n-4]$

(9: magnitude; 6: location.)

=> If we know the impulse response of a system we can easily determine its output without physically perform

$\delta[n]$ ——— [System] ——— $h[n]$

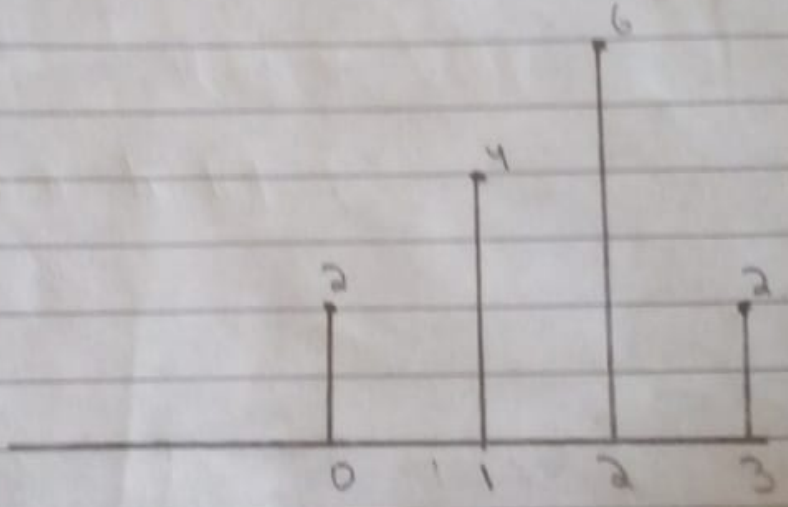
Date: _____

Date:_____

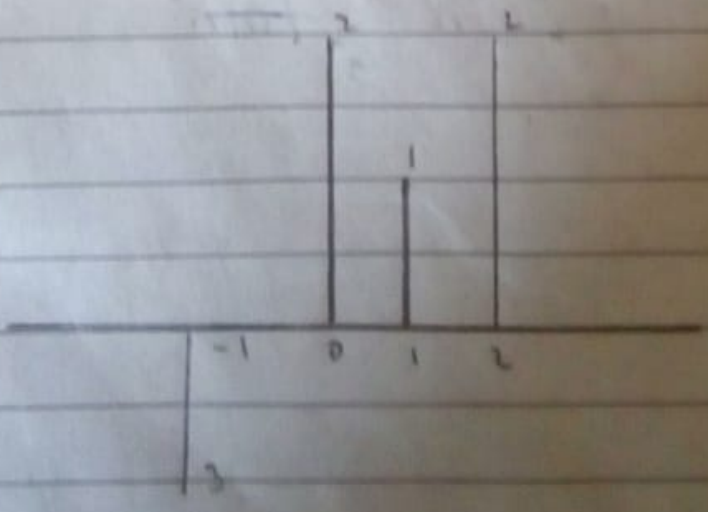
page = 7

=>

$x[n] = \{2, 4, 6, 2\}$.



h[n]



Date:

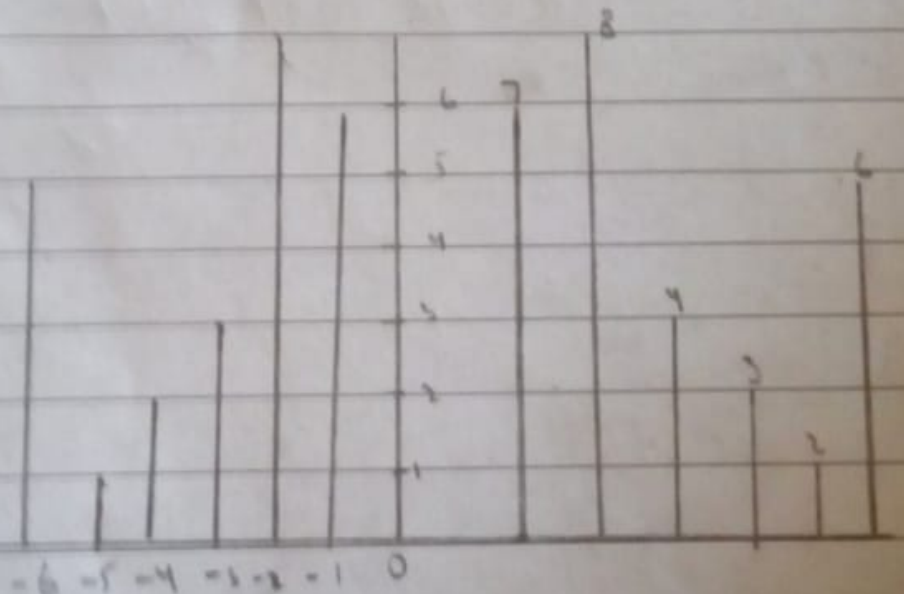
ID = 6988 Page = 2

=> Question No 1

$C_1 = C_k + N_0 = C_k$

$h = C_k = C_{N_0 - k} = C_k^*$

$x[n] = [7, 8, 4, 3, 2, 6]$



$$\Rightarrow C_K = \frac{1}{N_0} \sum_{n=0}^{N_0-1} x[n] e^{-j\left(\frac{2\pi}{N_0}\right)kn}$$

$\therefore e^{j\theta} = \cos\theta + j\sin\theta$

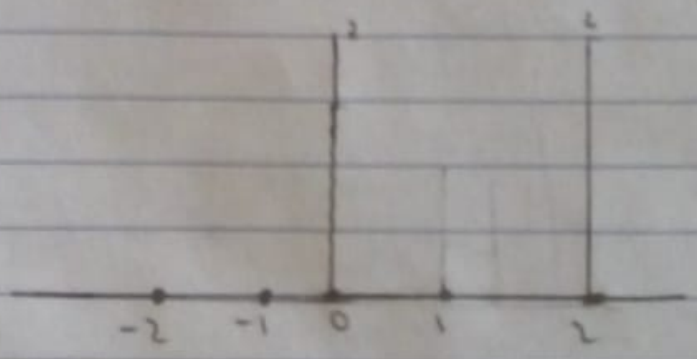
So $e^{-j\left(\frac{2\pi}{2^2}\right)} = \cos(\pi/2) - j\sin(\pi/2)$

Date:_____ Page= 8 ID= 6988

No for product sequence.

$x[n] * h[n]$

$x[n]\ h[-k]$.



Sum = $y(0) = 0+0+2+2+0$

$= 4$

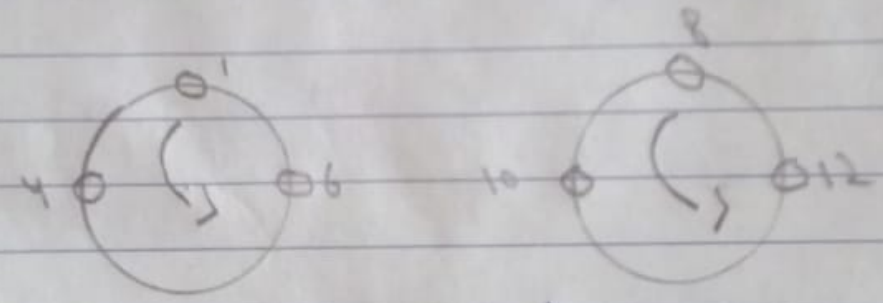
Date: _____ Page = 10 = 10 = 1089

Q 5

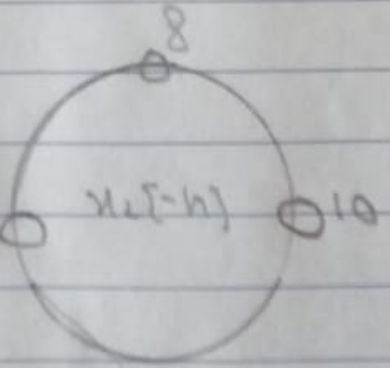
$x_1[n] = 2, 4, 6$

$x_2[n] = 8, 10, 12$

First of all we make the cycle



Folding this method we take dots wise mirror image of one sequence.



Date:

$\Rightarrow$ $\boxed{C_0 = 5.16}$ Dc component

Now at $k=1$

$$C_1 = \frac{1}{6} \sum_{n=0}^{5} x[n] (-j)^n$$

$$C_1 = \frac{1}{6} [(-j)^0 x[7] + (-j)^1 x(8)$$

$$+ -j^2 x[4] + (-j)^3 x[3] + -j^4 x[2]$$

$$+ -j^5 x[6]]$$

$$\Rightarrow C_1 = \frac{1}{6} [-j - 7 + 23j].$$

$$C_1 = -\frac{1}{7} + \frac{j}{23}$$

Also Solve for C_2 & C_3 we find Coffiecent up to time period range

Date: _____

Page = 6

Q = 3

graphical method

~~h[n] = [ ]~~

h[n] = {2, 1, 2, -1}

x[n] = {2, 4, 6, 2}

h[n]