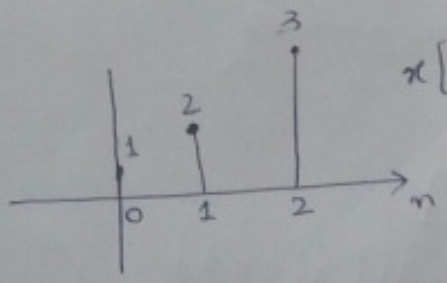
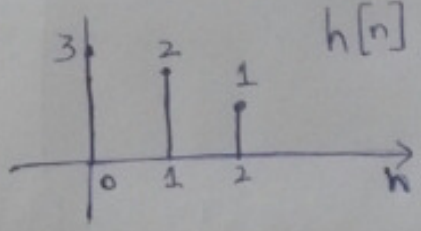
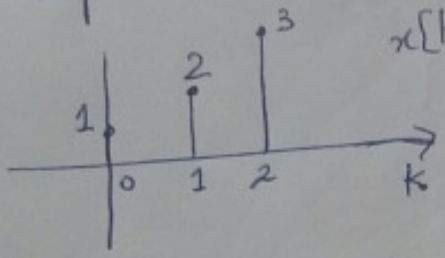
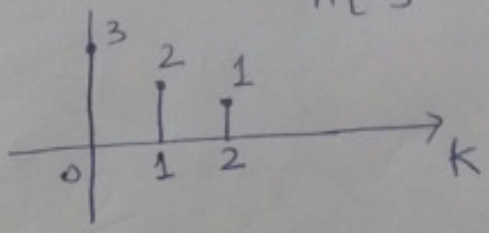
Q



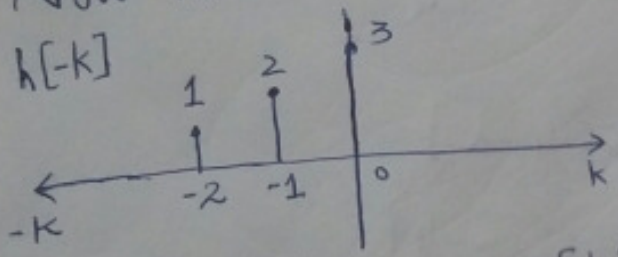


Sol:- Replace n with k





Now invert h[k] to get h[-k]

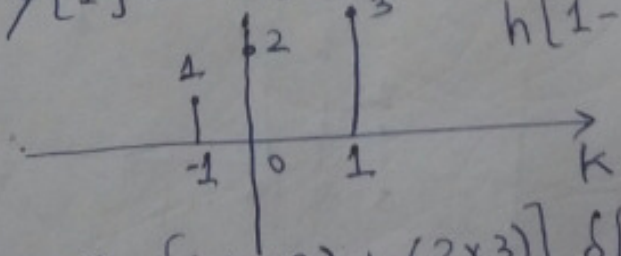


$y[0] = (1 \times 3)\,\delta[n]$

$y[0] = 3\,\delta[n]$

Now Convolving x[k] with h[1-k],

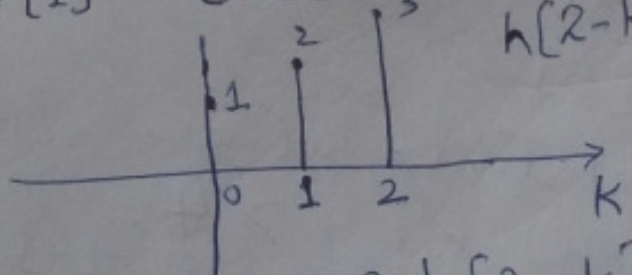
$y[1] = x[k]\,h[1-k]$



$y[1] = [(1 \times 2) + (2 \times 3)]\,\delta[n-1]$

$y[1] = [2 + 6]\,\delta[n-1]$

$y[1] = 8\,\delta[n-1]$

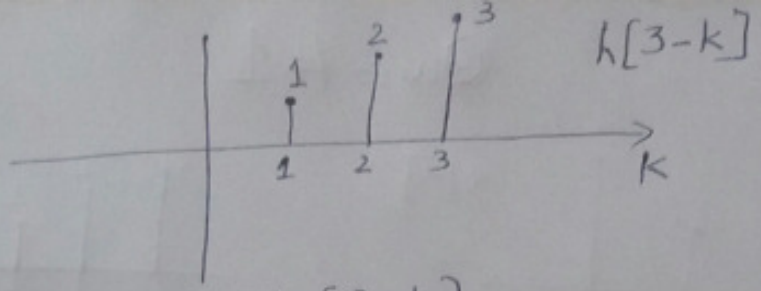


$y[2] = x[k]\,h[2-k]$

$y[2] = [(1 \times 1) + (2 \times 2) + (3 \times 3)]\,\delta[n-2]$

$y[2] = [1 + 4 + 9]\,\delta[n-2]$

$y[2] = 14\,\delta[n-2]$

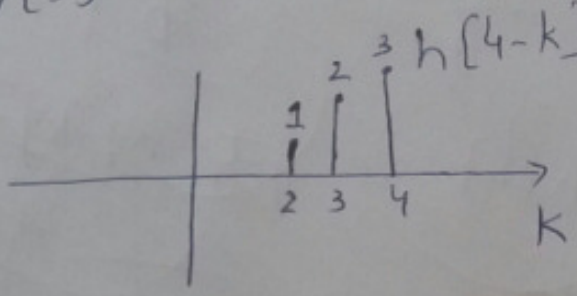


$y[3] = x[k]\, h[3-k]$

$y[3] = [(1\times2) + (2\times3)]\, \delta[n-3]$

$y[3] = [2 + 6]\, \delta[n-3]$

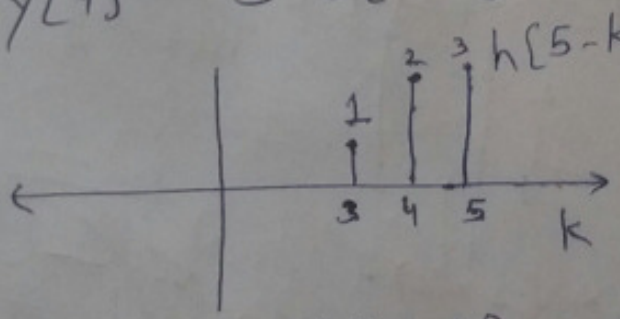
$y[3] = 8\, \delta[n-3]$



$y[4] = x[k]\, h[4-k]$

$y[4] = [(1\times3)]\, \delta[n-4]$

$y[4] = 3\, \delta[n-4]$



$y[5] = x[k]\, h[5-k]$

$y[5] = [0]\, \delta[n-5]$

$y[5] = 0$

As there is no relativity between $x[k]$ and $h[-k]$ for $n > 4$, so $y[n] = 0$ for $n > 4$.

So, $y[n] = y[0] + y[1] + y[2] + y[3] + y[4]$

$y[n] = 3\delta[n] + 8\delta[n-1] + 14\delta[n-2] + 8\delta[n-3] + 3\delta[n-4]$