Lab Report-3

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1.a)

Convolution of y[n]=x[n]*h[n]

For discrete signals:

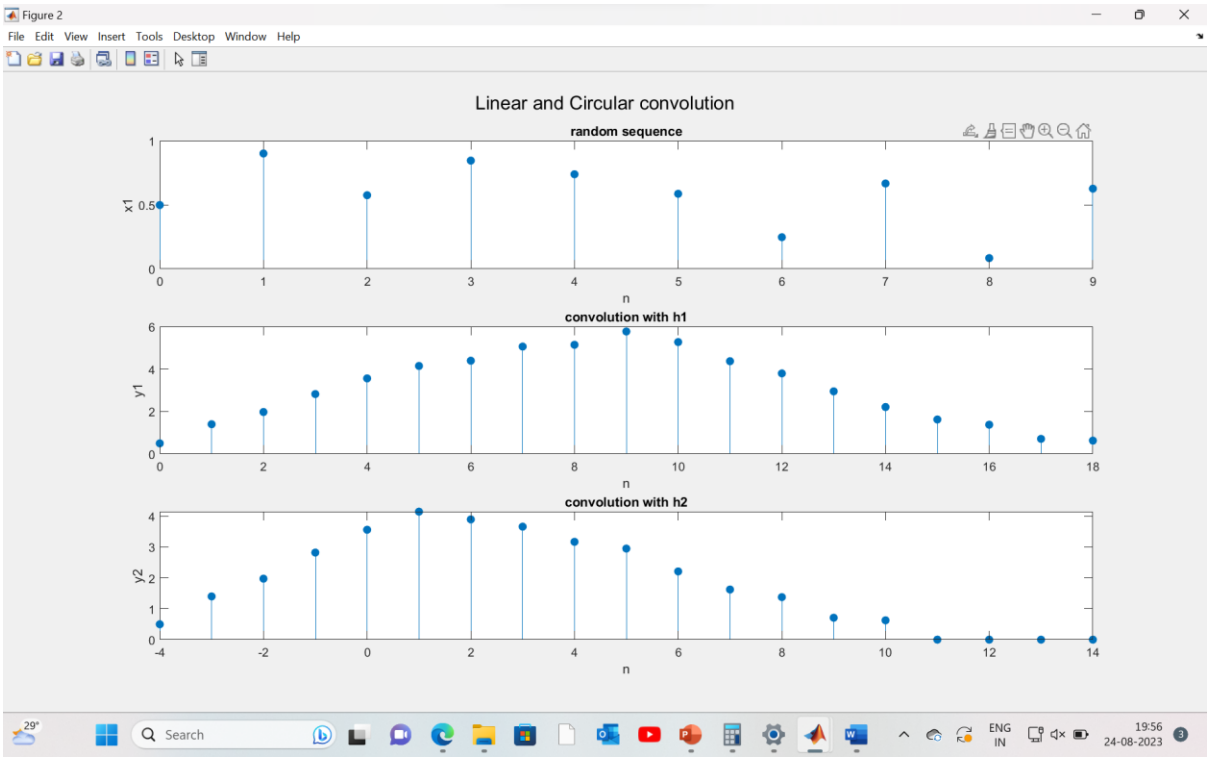
⇨ $Y[n]=\sum x[k]*h[n-k]$

Here in case(i)one signal is unit pulse sequence h1 starting at n=0 to n=9 and the other signal is random sequence x1

The convolution of x1 and h1 is y1

And in case(ii) one signal is unit pulse sequence h2 starting at n=0 to n=9 and the other signal is random sequence x1
The convolution of x1 and h2 is y2

Plot:

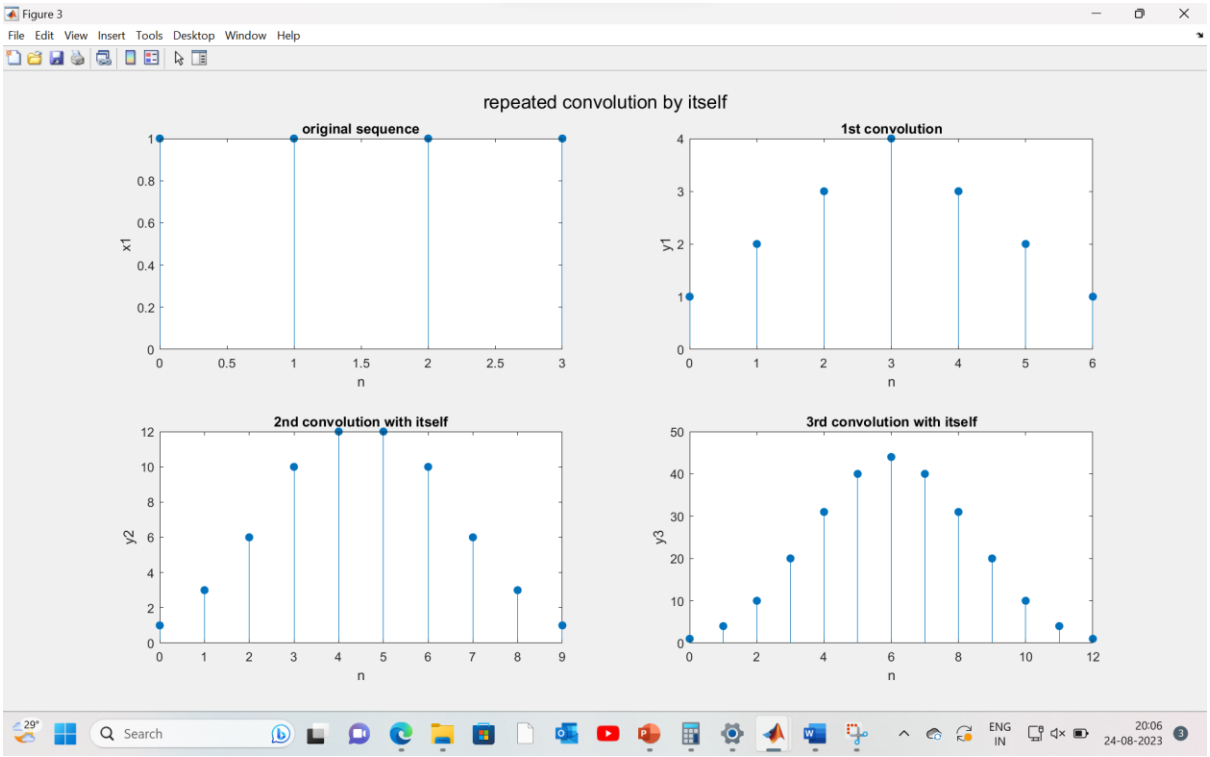


b)

convolution of a signal with itself repeatedly

here the signal is a unit pulse sequence at n=0 to n=3

Plot:

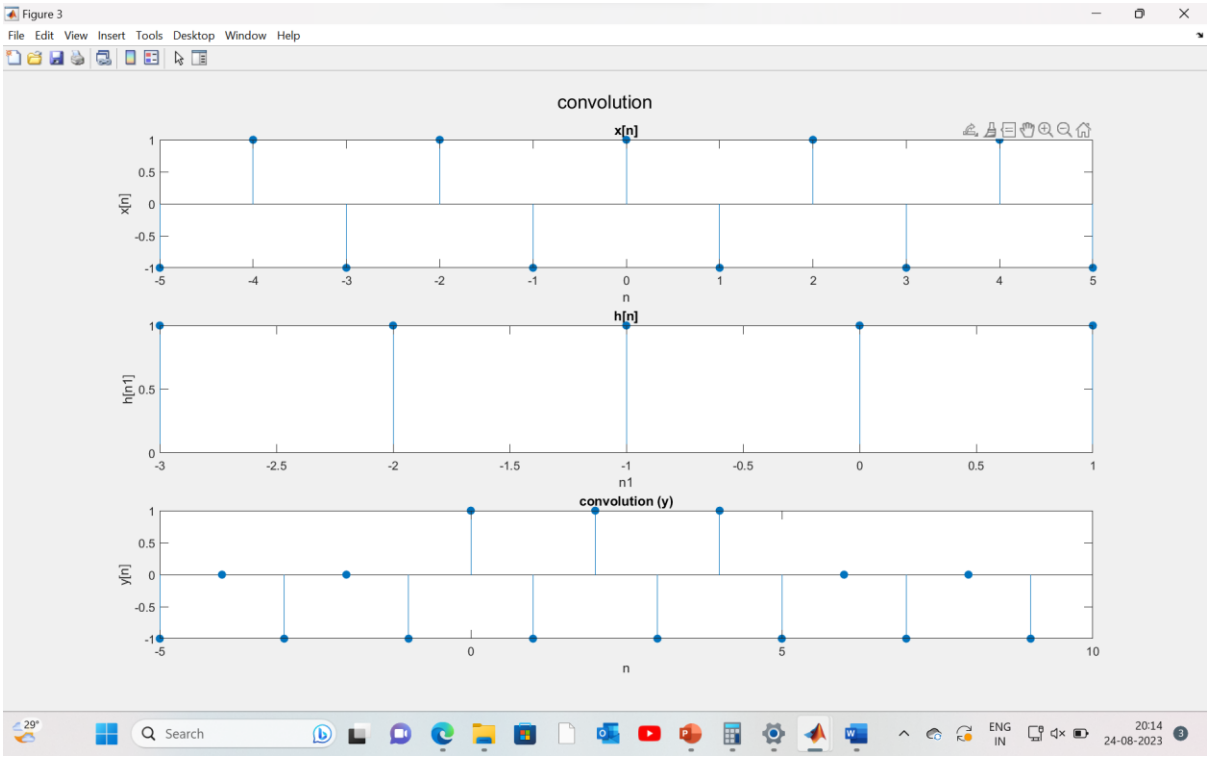


c)

Here the convolution of x[n] and unit pulse sequence starting at n=-3 to n=1 is y[n]

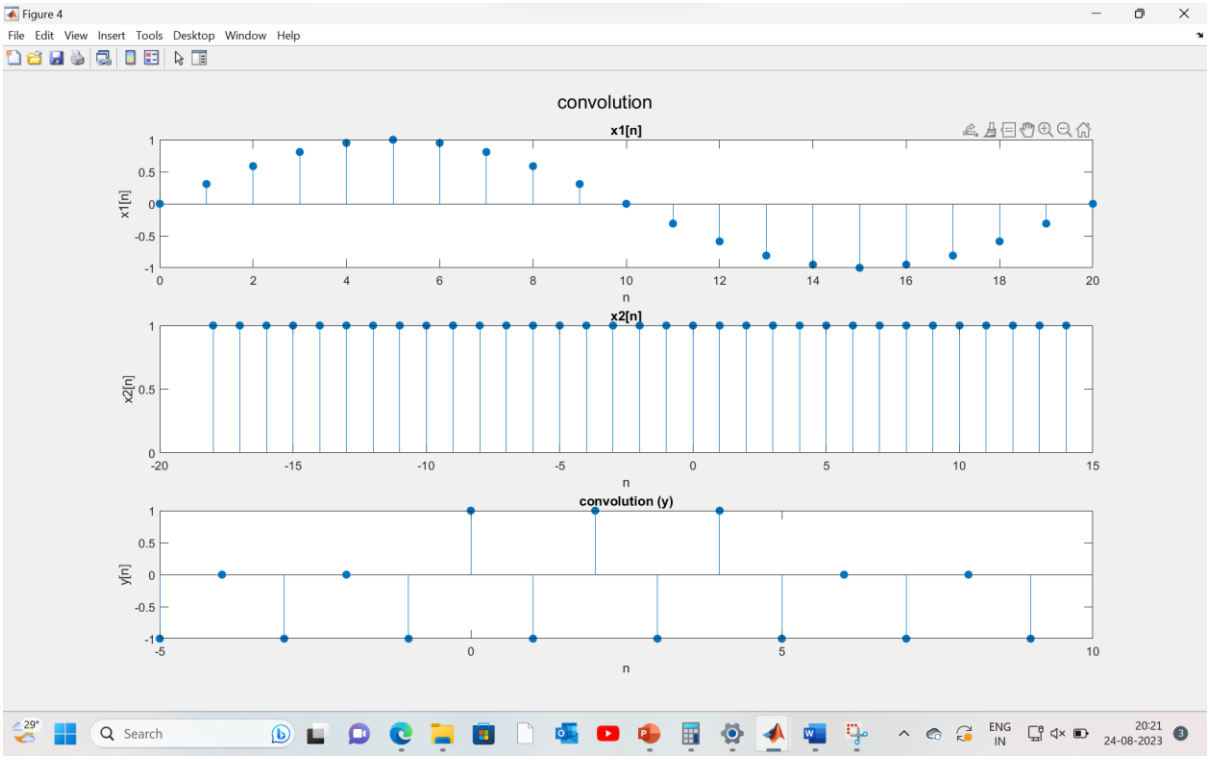
Where x[n]=(-1)^n for n=[-5,5]

Plot:



d)x1[n]=sin(2*pi*f*n) for n=[0,20] and
x2[n]=(-1)^n for n=[-18,14]
convolution of x1[n] and x2[n] is y

Plot:



2)

X1[n] is a random Guassian sequence of length 10 and

X2[n] is $\boldsymbol{\delta}$[n-3] starting from n=0 to n=9

Linear Convolution of x1[n] and x2[n] is y1[n]

Circular Convolution of x1[n] and x2[n] is y2[n]

Plot:

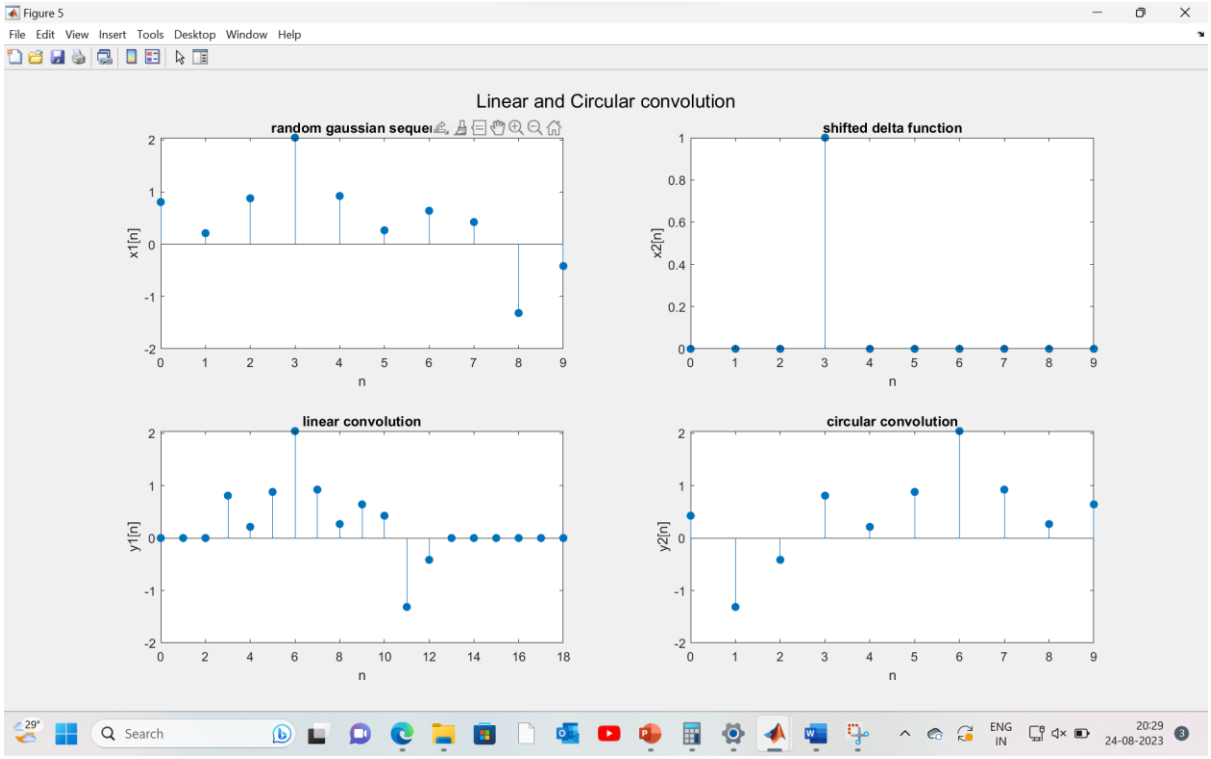


Figure 5
File Edit View Insert Tools Desktop Window Help
Linear and Circular convolution
random gaussian sequel
x1[n]
n
shifted delta function
x2[n]
n
linear convolution
y1[n]
n
circular convolution
y2[n]
n
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