//Program for DIF-FFT

//Sonu Sharma

//TE EXTC B Roll No.:630

x0=1

x1=0

x2=2

x3=0

x4=3

x5=0

x6=4

x7=0

a=x0+x4

b=x1+x5

c=x2+x6

d=x3+x7

e=x0-x4

f1=(x1-x5)

f=f1\*(0.707+(0.707\*%i))

g1=(x2-x6)

g=g1\*(-%i)

h1=x3-x7

h=h1\*(0.707-(0.707\*%i))

A=a+c

B=b+d

C=a-c

D1=(b-d)

D=D1\*(-%i)

E=e+g

F=f+h

G=e-g

H1=(f-h)

H=H1\*(-%i)

X0=A+B

X4=A-B

X2=C+D

X6=C-D

X1=E+F

X5=E-F

X3=G+H

X7=G-H

disp(X7,X6,X5,X4,X3,X2,X1,X0,'X=')

Output:

X=

10.

-2. + 2.i

-2.

-2. - 2.i

10.

-2. + 2.i

-2.

-2. - 2.i

//Program for IDIF-FFT

//Sonu Sharma

//TE EXTC B Roll No.:630

N=8

X0=10

X1=-2+2\*%i

X2=-2

X3=-2-2\*%i

X4=10

X5=-2+2\*%i

X6=-2

X7=-2-2\*%i

a=X0+X4

b=X1+X5

c=X2+X6

d=X3+X7

e=X0-X4

f1=(X1-X5)

f=f1\*(-(0.707+0.707\*%i))

g1=(X2-X6)

g=g1\*(%i)

h1=X3-X7

h=h1\*(-(0.707-0.707\*%i))

A=a+c

B=b+d

C=a-c

D1=(b-d)

D=D1\*(%i)

E=e+g

F=f+h

G=e-g

H1=(f-h)

H=H1\*(%i)

x0=(A+B)/N

x4=(A-B)/N

x2=(C+D)/N

x6=(C-D)/N

x1=(E+F)/N

x5=(E-F)/N

x3=(G+H)/N

x7=(G-H)/N

disp(x7,x6,x5,x4,x3,x2,x1,x0,'x=')

Output:

x=

1.

0.

2.

0.

3.

0.

4.

0.