Rewrite as unit step function we have:

()

Rewrite as unit step function we have:

Given that:

Let , it holds that:

Taking -transform both side of , we obtain:

a)

b)

Thus, the solution of the given system difference equations is:

We have:

Since we have: is an odd function with respect to , which leads to:

Therefore,

Since for

Thus,

a)

Since, is an even function, so:

b)

For any even integer :

c)

For any odd integer :

d)

Due to the given function is even, therefore,

e)

By Parseval’s identity we obtain: