Let = and =1 then =

It is easy to see that =

Therefore =2

=> , thus lim=0

Now using the recurrence relation, we see that

=>

We also see that

Let then lim 0

=>

=> 2

=> 2  2

Now consider the sequence 2

=>

We see that

=> or lim 0

Since we have 2

=> converges to 2  as ->