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In [ ]: '''  
Name: Vaidehi Gurav  
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Class: TE-EXTC A  
Division: A  
Year Of Study: TE  
Branch: EXTC  
Date: 24/08/2023  
Time: 14:00  
'''
```

PS : Verification of parsavel's theorem.

```
In [2]: import numpy as np
```

```
In [3]: x=eval(input('Get Sequence X(n)='))  
L=len(x)  
N=L  
print(N)
```

4

```
In [4]: Ex=np.sum(np.square(x))  
print(Ex)
```

30

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In [5]: X=np.fft.fft(x)  
print(X)
```

[10.+0.j -2.+2.j -2.+0.j -2.-2.j]

```
In [6]: x_mag=np.abs(X)  
print(x_mag)
```

[10. 2.82842712 2. 2.82842712]

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In [7]: x_mag_k=np.sum(np.square(x_mag))  
print(x_mag_k)
```

120.0

```
In [8]: EX=np.sum(np.square(x_mag)/4)  
print(EX)
```

30.0

```
In [10]: Ex==EX
```

```
Out[10]: True
```