EE23BTECH11047 - Deepakreddy P

EXERCISE 9.1

4 Write the first five terms of the sequence whose nth term is $\frac{2n-3}{6}$ and obtain the Z transform of the series

Solution:

$$x(n) = \frac{2n-1}{6}\left(u(n)\right) \tag{1}$$

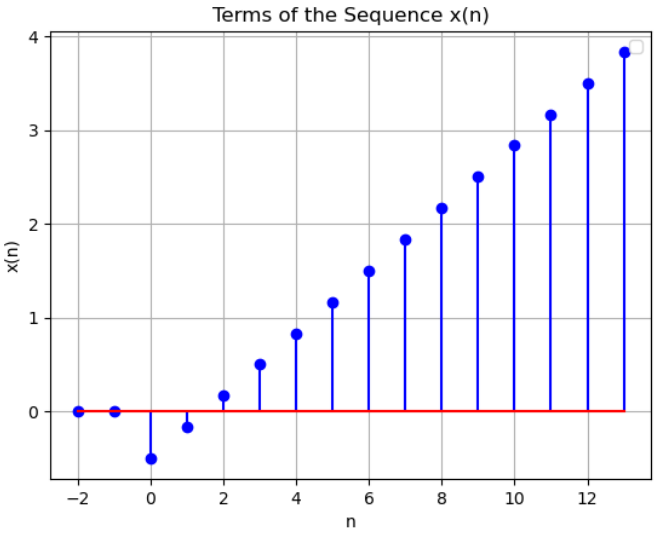

Fig. 1. Plot of x(n) vs n

$$X(z) = \frac{3z^{-1}-1}{6(1-z^{-1})^2} \qquad \{z \in \mathbb{C} : z \neq 1\} \tag{2}$$

Symbol	Parameters
x(n)	general term of the series
X(z)	Z-transform of x(n)
u(n)	unit step function

TABLE I
PARAMETERS