1.1.4.5

EE24BTECH11030 - J.KEDARANANDA

Question:
Find the coordinates of **P** on **AD** such that **AP** : **PD** = 2 : 1.where coordinates of **A** are $(0, 0)$ and **B** are $(0, 9)$

Solution:

Variable	Description
x	x coordinate of P
y	y coordinate of P

TABLE 0: Variables Used

$$\mathbf{P} = \frac{k(\mathbf{B}) + (\mathbf{A})}{k+1} = \begin{pmatrix} x \\ y \end{pmatrix} \tag{0.1}$$

$$\tag{0.2}$$

Here according to problem value of k is 2

$$P = \frac{2B + A}{3} = \frac{3\begin{pmatrix} 0 \\ 9 \end{pmatrix} + \begin{pmatrix} 0 \\ 0 \end{pmatrix}}{3} = \frac{\begin{pmatrix} 0 \\ 18 \end{pmatrix}}{3} \tag{0.3}$$

$$\tag{0.4}$$

$$P = \begin{pmatrix} 0 \\ 6 \end{pmatrix} \tag{0.5}$$

Hence the coordinates of **P** are $(0, 6)$

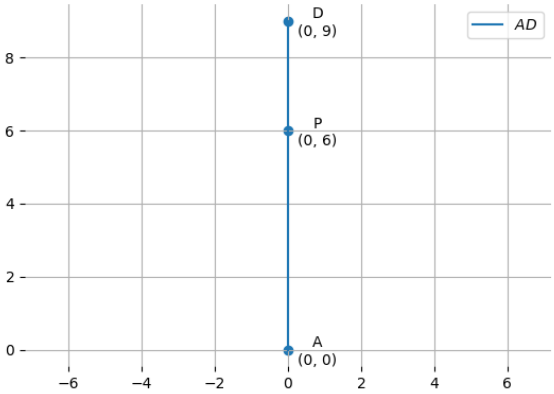

Fig. 0.1: Stem Plot of y(n)