EE24BTECH11004 - ANKIT JAINAR

Question: Find the coordinates of the points which divide the line segment joining A(-2, 2) and B(2, 8) into four equal parts.

Solution: :Using the section formula for internal division, the coordinates of the point dividing the line in the ratio k:1 are given by:

$$R_k = \left(\frac{x_2 + k \cdot x_1}{k + 1}, \frac{y_2 + k \cdot y_1}{k + 1}\right) \tag{0.1}$$

where $k = \frac{i}{n-i} n$, 0 < i < n is number of equal parts For n = 4

For n = 4 now for

 $R_1, k = \frac{1}{3} \tag{0.2}$

$$R_2, k = 1$$
 (0.3)

$$R_3, k = 3$$
 (0.4)

(0.5)

by substituting A=(-2,2) and B=(2,8) in R_k we get

$$R_1 = (-1.0, 3.5) \tag{0.6}$$

$$R_2 = (0.0, 5.0) \tag{0.7}$$

$$R_3 = (1.0, 6.5) \tag{0.8}$$

(0.9)

1

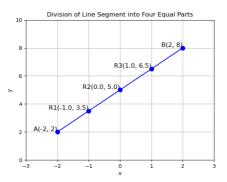


Fig. 0.1: Stem Plot of y(n)