

1-1.5-29

EE24BTECH11005 - Arjun Pavanje

Question:

The coordinates of the point P dividing the line segment joining the point $A(1,3)$ and $B(4,6)$ in the ratio $2:1$ are (10, 2012)

Solution:

Variable	Description
P	Point to be found
A	$(1, 3)$ point
B	$(4, 6)$ point
k	ratio in which P divides AB

TABLE I: Variables Used

If P divides AB in the ratio $k : 1$,

$$P = \frac{kB + A}{k + 1} \quad (1)$$

From equation we have

$$P = \frac{\begin{pmatrix} 4k + 1 \\ 6k + 3 \end{pmatrix}}{k + 1} \quad (2)$$

here, $k = 2$, so putting the k we get

$$P = \begin{pmatrix} 3 \\ 5 \end{pmatrix} \quad (3)$$

The coordinates of the required point P are

$$\begin{pmatrix} 3 \\ 5 \end{pmatrix} \quad (4)$$

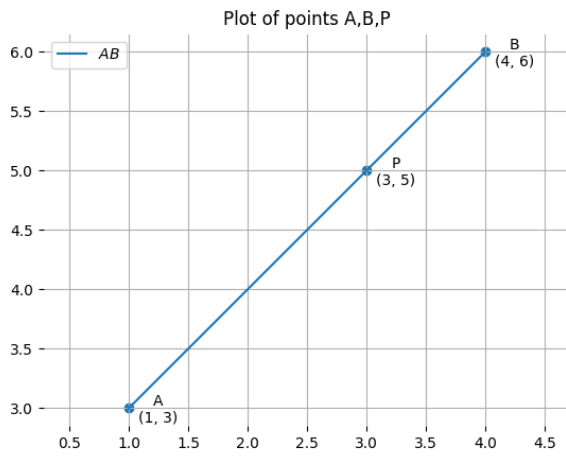


Fig. 1: Plot of the points A,B,P