1-1.5-5

EE24BTECH11042 - SRUJANA

Question:
Find the coordinates of the point which divides the line segment joining the points $A(\mathbf{7}, \mathbf{-1})$ and $B(\mathbf{-3}, \mathbf{-4})$ in the ratio 2 : 3. **Solution**:

points	coordinates
A	$(7, -1)$
B	$(-3, -4)$

$$A = \begin{pmatrix} 7 \\ -1 \end{pmatrix}, B = \begin{pmatrix} -3 \\ -4 \end{pmatrix} \tag{0.1}$$

let C be the point which divides the AB in the ratio $\frac{2}{3}$: 1

$$\implies C = \frac{\frac{2}{3}B + A}{\frac{2}{3} + 1} \tag{0.2}$$

$$\implies C = \begin{pmatrix} 3 \\ \frac{-11}{5} \end{pmatrix} \tag{0.3}$$

This can be represented graphically as below