1.5.8

EE25BTECH11020 - Darsh Pankaj Gajare
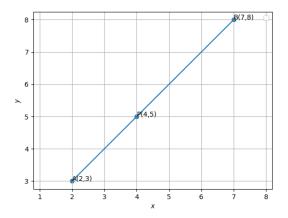
Question:
Find the ratio in which $\mathbf{P}\,(4,5)$ divides the line segment joining $\mathbf{A}\,(2,3)$ and $\mathbf{B}\,(7,8)$.
Solution: Using Section Formula,

$$\mathbf{P} = \frac{k\mathbf{B} + \mathbf{A}}{k+1} \tag{1}$$

$$\begin{pmatrix} 4 \\ 5 \end{pmatrix} = \frac{k\begin{pmatrix} 7 \\ 8 \end{pmatrix} + \begin{pmatrix} 2 \\ 3 \end{pmatrix}}{k+1} \tag{2}$$

$$3k\begin{pmatrix} 1 \\ 1 \end{pmatrix} = 2\begin{pmatrix} 1 \\ 1 \end{pmatrix} \tag{3}$$

$$or, k = \frac{2}{3} \tag{4}$$