1.5.8

EE25BTECH11020 - Darsh Pankaj Gajare

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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,

$$\mathbf{P} = \frac{k\mathbf{B} + \mathbf{A}}{k + 1} \tag{0.1}$$

$$\begin{pmatrix} 4 \\ 5 \end{pmatrix} = \frac{k \begin{pmatrix} 7 \\ 8 \end{pmatrix} + \begin{pmatrix} 2 \\ 3 \end{pmatrix}}{k + 1} \tag{0.2}$$

$$3k \begin{pmatrix} 1 \\ 1 \end{pmatrix} = 2 \begin{pmatrix} 1 \\ 1 \end{pmatrix} \tag{0.3}$$

$$or,\ k = \frac{2}{3} \tag{0.4}$$