

ASSIGNMENT-12.11.2.3

Question : Show that the line through the points $(4, 7, 8), (2, 3, 4)$ is parallel to the line through the points $(-1, -2, 1), (1, 2, 5)$.

Solution : For line passing through $(4, 7, 8), (2, 3, 4)$, the direction vector,

$$\mathbf{m}_1 = \begin{pmatrix} -2 \\ -4 \\ -4 \end{pmatrix} \quad (1)$$

For line passing through $(-1, -2, 1), (1, 2, 5)$, the direction vector,

$$\mathbf{m}_2 = \begin{pmatrix} 2 \\ 4 \\ 4 \end{pmatrix} \quad (2)$$

Therefore, the lines are parallel to each other.