

## 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.

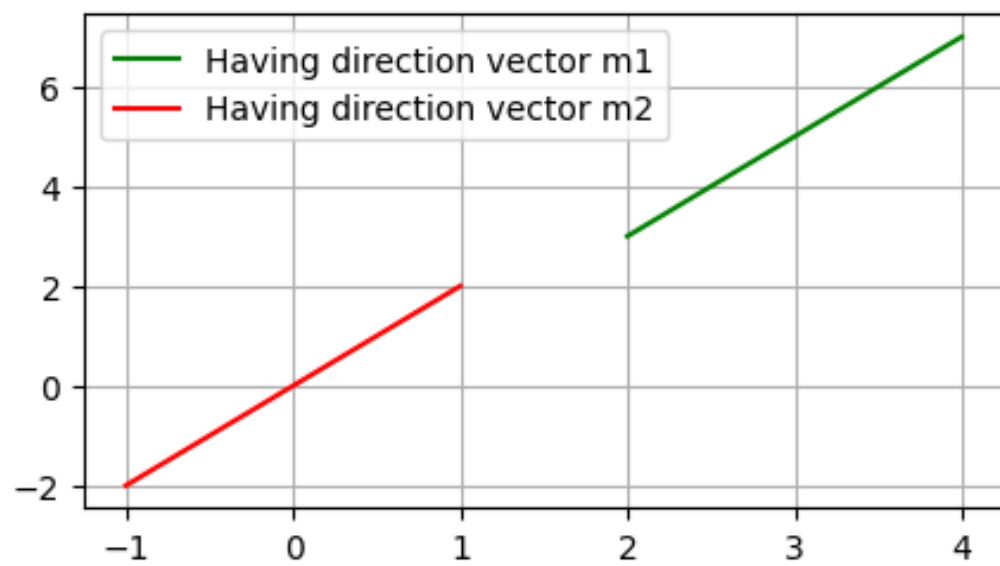


Figure 1: