

Three Dimensional Geometry - Class XII

Related Questions with Solutions

Questions

Question: 01

The value of m for which straight line $3x - 2y + z + 3 = 0 = 4x - 3y + 4z + 1$ is parallel to the plane $2x - y + mz - 2 = 0$ is

- A. -2
- B. 8
- C. 18
- D. 11

Solutions

Solution: 01

$$3x - 2y + z + 3 = 0 = 4x - 3y + 4z + 1$$

Direction ratio of line

$$= \begin{vmatrix} \hat{i} & \hat{j} & \hat{k} \\ 3 & -2 & 1 \\ 4 & -3 & 4 \end{vmatrix}$$

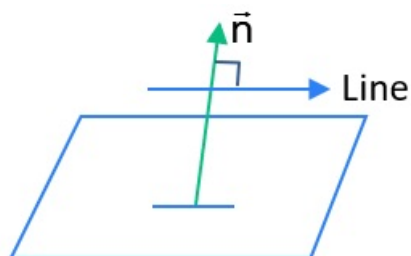
$$= -5\hat{i} - 8\hat{j} - \hat{k}$$

$$\vec{n} = 2\hat{i} - \hat{j} + m\hat{k}$$

$$\text{Now, } (-5\hat{i} - 8\hat{j} - \hat{k}) \cdot (2\hat{i} - \hat{j} + m\hat{k}) = 0$$

$$-10 + 8 - m = 0$$

$$m = -2$$



Correct Options

Answer:01

Correct Options: A