

12.11.3.3

Question : Find the Cartesian equation of the following planes:

1. $\mathbf{r} \cdot (\hat{i} + \hat{j} - \hat{k}) = 2$

2. $\mathbf{r} \cdot (2\hat{i} + 3\hat{j} - 4\hat{k}) = 1$

3. $\mathbf{r} \cdot [(s - 2t)\hat{i} + (3 - t)\hat{j} + (2s + t)\hat{k}] = 15$

Solution :

1. $\begin{pmatrix} 1 & 1 & -1 \end{pmatrix} \mathbf{X} = 2$

2. $\begin{pmatrix} 2 & 3 & -4 \end{pmatrix} \mathbf{X} = 1$

3. $\begin{pmatrix} 2 & -5 & -1 \end{pmatrix} \mathbf{X} = 15$