ASSIGNMENT 4

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Download all python codes from

https://github.com/Atlakeerthana/Assignment4/tree/main/Assignment4

and latex-tikz codes from

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1 Linear Forms-2.43 D

Determine whether the given planes are parallel or perpendicular, and in case they are neither,find the angle between them. $\begin{pmatrix}2 & -1 & 3\end{pmatrix}$ $\mathbf{x}$=1 and $\begin{pmatrix}2 & -1 & 3\end{pmatrix}$ $\mathbf{x}$=-3

2 Explanation

Given the planes,

$$P_1 : \begin{pmatrix}2 & -1 & 3\end{pmatrix}\mathbf{x} = 1 \tag{1}$$

$$P_2 : \begin{pmatrix}2 & -1 & 3\end{pmatrix}\mathbf{x} = -3 \tag{2}$$

The normal vector of P_1 and P_2 are

$$\mathbf{n}_1 = \begin{pmatrix}2\\-1\\3\end{pmatrix} \tag{3}$$

and

$$\mathbf{n}_2 = \begin{pmatrix}2\\-1\\3\end{pmatrix}, \tag{4}$$

$\therefore$ $\mathbf{n}_1 = \mathbf{n}_2$. The normal vectors are same. so the given planes are parallel. Fig 2.1 shows the planes are parallel.

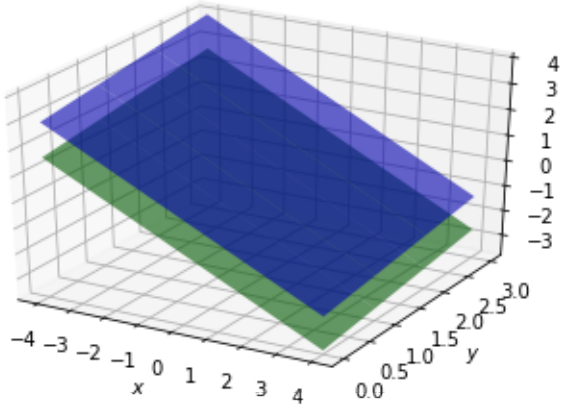

Fig. 2.1. PARALLEL PLANES