

# EE3900 Assignment-4

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Download all python codes from

<https://github.com/vrahul02/EE3900/tree/main/Assignment-4/Codes>

and latex-tikz codes from

<https://github.com/vrahul02/EE3900/tree/main/Assignment-4/Assignment-4.tex>

## PROBLEM LINEAR FORMS Q2.25

Find the intercepts cut off by the plane  $\begin{pmatrix} 2 & 1 & 1 \end{pmatrix} \mathbf{x} = 5$ .

### SOLUTION

Let a, b and c be the x, y and z intercept respectively.

Then,

$$\begin{pmatrix} 2 & 1 & 1 \end{pmatrix} \begin{pmatrix} a \\ 0 \\ 0 \end{pmatrix} = 5 \quad (0.0.1)$$

$$2 \times a = 5 \quad (0.0.2)$$

$$a = 2.5 \quad (0.0.3)$$

$$\begin{pmatrix} 2 & 1 & 1 \end{pmatrix} \begin{pmatrix} 0 \\ b \\ 0 \end{pmatrix} = 5 \quad (0.0.4)$$

$$b = 5 \quad (0.0.5)$$

$$\begin{pmatrix} 2 & 1 & 1 \end{pmatrix} \begin{pmatrix} 0 \\ 0 \\ c \end{pmatrix} = 5 \quad (0.0.6)$$

$$c = 5 \quad (0.0.7)$$

Thus the intercept cut off by the given plane is 2.5, 5 and 5 on x, y and z axis respectively.

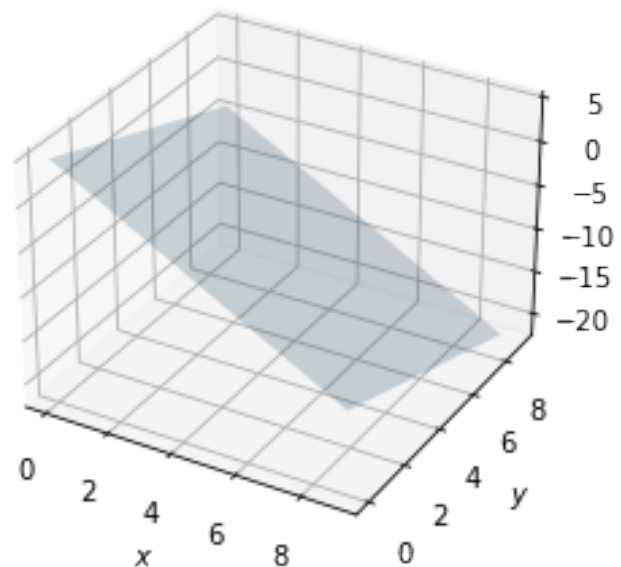


Fig. 0: 3D Plot