

Assignment 2

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Abstract—This document explains how to find the point of intersection of a line and a plane.

Download the python code from

<https://github.com/vishalashok98/AI5006/tree/master/Assignment2>

and latex-tikz codes from

<https://github.com/vishalashok98/AI5006/tree/master/Assignment2>

1 PROBLEM

Evaluate $\begin{vmatrix} 1 & x & y \\ 1 & x+y & y \\ 1 & x & x+y \end{vmatrix}$ Using properties of determinants

2 SOLUTION

$$\Delta = \begin{vmatrix} 1 & x & y \\ 1 & x+y & y \\ 1 & x & x+y \end{vmatrix} \quad (2.0.1)$$

Performing transformations

$$\begin{vmatrix} 1 & x & y \\ 1 & x+y & y \\ 1 & x & x+y \end{vmatrix} \xrightarrow[R_3=R_3-R_1]{R_2=R_2-R_1} xy \begin{vmatrix} 1 & x & y \\ 0 & 1 & 0 \\ 1 & x & 1 \end{vmatrix} \quad (2.0.2)$$

Finding determinant along Row 3

$$\Delta = xy \quad (2.0.3)$$