

# Assignment 1

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**Abstract**—This document explains the concept of parallel planes by solving a problem.

Download the python code from

[https://github.com/Sairam13001/AI5006/tree/master/Assignment\\_1](https://github.com/Sairam13001/AI5006/tree/master/Assignment_1)

and latex-tikz codes from

[https://github.com/Sairam13001/AI5006/blob/master/Assignment\\_1/assignment\\_1.tex](https://github.com/Sairam13001/AI5006/blob/master/Assignment_1/assignment_1.tex)

## 1 PROBLEM

Find the distance between the two planes  $(2\ 3\ 4)x = 4$  and  $(4\ 6\ 8)x = 12$

## 2 EXPLANATION

If the two planes are of the form  $n^T x = c_1$  and  $n^T x = c_2$ , Then the distance between the planes is given by :

$$\frac{|c_1 - c_2|}{\|n\|}$$

## 3 SOLUTION

So, the distance between the given planes is:

$$\frac{|4-6|}{\|[2\ 3\ 4]\|} = \frac{2}{\sqrt{29}}$$

Assignment-1 : Parallel Planes

