Assignment 10

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***Abstract*—This document contains a solution to find whether the given function T from R^2 into R^2 is linear transformation or not.**

Download all latex-tikz codes from

https://github.com/Matish007/Matrix−Theory−EE5609−/tree/master/Assignment_10

1 Problem

Whether the given function T from R^2 into R^2 is linear transformation or not.

$$T\begin{pmatrix}x_1\\x_2\end{pmatrix} = \begin{pmatrix}1+x_1\\x_2\end{pmatrix} \tag{1.0.1}$$

2 SOLUTION

Counter example can be given as follows:-

$$x_1 = x_2 = 0 \tag{2.0.1}$$

Substituting (2.0.1) in (1.0.1) we get,

$$T\begin{pmatrix}0\\0\end{pmatrix} = \begin{pmatrix}1\\0\end{pmatrix} \tag{2.0.2}$$

(2.0.2) is clearly false because linear transformation on $\begin{pmatrix}0\\0\end{pmatrix}$ will always be equal to $\begin{pmatrix}0\\0\end{pmatrix}$