

Assignment 9

Matish Singh Tanwar

Abstract—This document contains a solution to find explicitly all 2x2 row-reduced echelon matrices.

Download all latex-tikz codes from

https://github.com/Matish007/Matrix-Theory-EE5609-/tree/master/Assignment_9

1 PROBLEM

Describe explicitly all 2x2 row-reduced echelon matrices.

2 SOLUTION

2x2 matrices which are row-reduced echelon ma-

trix are:-

$$\begin{pmatrix} 0 & 0 \\ 0 & 0 \end{pmatrix}, \begin{pmatrix} 1 & 0 \\ 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 \\ 0 & 0 \end{pmatrix}, \begin{pmatrix} 1 & 1 \\ 0 & 0 \end{pmatrix}, \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$$

$\begin{pmatrix} 0 & 0 \\ 0 & 0 \end{pmatrix}$ has no basis so it's rank is 0.

$\begin{pmatrix} 1 & 0 \\ 0 & 0 \end{pmatrix}$ has $\begin{pmatrix} 1 \\ 0 \end{pmatrix}$ as basis.

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$\begin{pmatrix} 1 & 1 \\ 0 & 0 \end{pmatrix}$ have two basis $\begin{pmatrix} 1 \\ 0 \end{pmatrix}, \begin{pmatrix} 1 \\ 0 \end{pmatrix}$

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