

# Assignment 9

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**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](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 matrix can be represented as a linear combination of two matrices:-

$$c_1 \begin{pmatrix} 1 & 0 \\ 0 & 0 \end{pmatrix} + c_2 \begin{pmatrix} 0 & 1 \\ 0 & 0 \end{pmatrix} + c_3 \begin{pmatrix} 0 & 0 \\ 0 & 1 \end{pmatrix} \quad (2.0.1)$$