

Total Marks: 15

AMTL101 Quiz-1

Time: 30 mins

Name:

Entry No:

1. Find all possible real solutions of the following system of linear equations by converting the augmented matrix into its RRE form. [5]

$$2x_1 + 3x_2 + x_3 + 2x_4 = 8$$

$$3x_1 + 2x_2 + 2x_3 + x_4 = 8$$

$$5x_2 - x_3 + 4x_4 = 8$$

2. Find the inverse of the following matrix by performing elementary row operations. [5]

$$\begin{pmatrix} 1 & 2 & 3 \\ -1 & 0 & 2 \\ 1 & 1 & 1 \end{pmatrix}$$

3. Let V be the vector space \mathbb{R}^2 over the field \mathbb{R} . Is $W = \{(x, y) \in \mathbb{R}^2 : x^2 + y^2 \leq 1\}$ a subspace of V ? Justify your answer. [5]