

NMAI057 – Linear algebra 1

Tutorial 1

Date: September 29, 2020

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Problem 1. Over \mathbb{R} , find all solutions for the system of linear equations

$$\begin{aligned}x + 2y &= 5 \\ 2x - y &= 0\end{aligned}$$

Problem 2. Over \mathbb{R} , find all solutions for the system of linear equations

$$\begin{aligned}x - 3z &= 1 \\ -2x + 6z &= -2\end{aligned}$$

Problem 3. Over \mathbb{R} , find all solutions for the system of linear equations

$$\begin{aligned}x + y - z &= 1 \\ 2x + 2y + z &= 5 \\ x - y - z &= -1\end{aligned}$$

Problem 4. Over \mathbb{R} , find all solutions for the system of linear equations

$$\begin{aligned}x + y - z &= 1 \\ 2x + 2y + z &= 5\end{aligned}$$

Problem 5. Over \mathbb{R} , find all solutions for the system of linear equations

$$\begin{aligned}2x + 2y + z &= 5 \\ x - y - z &= -1\end{aligned}$$

Problem 6. Over \mathbb{R} , find all solutions for the system of linear equations

$$\begin{aligned}x_1 + x_2 + x_3 + x_4 &= 3 \\ x_1 - 2x_2 - x_3 - x_4 &= 1\end{aligned}$$

Problem 7. Over \mathbb{R} , find all solutions for the system of linear equations

$$\begin{aligned}2y - 3z &= -1 \\x - 5y + 4z &= 1 \\-3x + y + 2z &= -3\end{aligned}$$