

Homework #1

MATH 237 — Linear Algebra I
due Thursday, Aug 27, in class

Please print your name:

Problem 1. Consider the following system of linear equations:

$$\begin{aligned}x_1 + 2x_2 - x_3 &= 2 \\3x_1 - 2x_2 + x_3 &= 2 \\-x_1 + 2x_2 + 3x_3 &= 4\end{aligned}$$

- Determine its augmented matrix.
- Apply a sequence of elementary row operations to obtain an equivalent matrix in echelon form (“triangular” shape). Record all your row operations.
- Apply back-substitution to solve the corresponding linear system. Verify that your solution also solves the original linear system.
- Is this linear system consistent?