

## Homework 9: systems of linear equations

This is a short homework. But it is important you do it – I will assume you understand how to do this for the final exam. I strongly recommend you master using your calculator to solve these sorts of problem...

Here are four systems of linear equations.

A:

$$\begin{aligned}x + 2y &= 1 \\3x + 3y &= 1\end{aligned}$$

B:

$$\begin{aligned}x + 2y + 3z &= 0 \\4x + 5y + 6z &= 3 \\7x + 8y + 9z &= 0\end{aligned}$$

C:

$$\begin{aligned}x + 2y + 3z &= 0 \\4x + 5y + 6z &= 0 \\7x + 8y + 10z &= 0\end{aligned}$$

D:

$$\begin{aligned}x + 2y + 3z &= 1 \\4x + 5y + 6z &= 2 \\7x + 8y + 9z &= 3\end{aligned}$$

For each of A, B, C and D, answer the following questions:

1. Write down the augmented matrix corresponding to the system of linear equations.
2. Either by hand or (preferably) using your calculator, compute the reduced row echelon form of this augmented matrix.
3. Read of the general solution to the system of linear equations from this reduced row echelon form. If the system is inconsistent (no solutions) say so. If the system is consistent but has many solutions, indicate how many parameters are needed in the general solution.