

Chapter 3.1 & 3.2

Linear Algebra with applications to differential equations

College of the Atlantic. Winter 2019

1. (Re)introduce yourself to others in your group. Briefly share with your group-mates your thoughts about the impending Sunday snowstorm.

2. Solve the following system of equations:

$$\begin{aligned}2x + y &= 4 \\8x + 2y &= 0\end{aligned}\tag{1}$$

3. Solve the following system of equations:

$$\begin{aligned}2x + y &= 4 \\6x + 3y &= 0\end{aligned}\tag{2}$$

4. Solve the following system of equations:

$$\begin{aligned}2x + y &= 4 \\6x + 3y &= 12\end{aligned}\tag{3}$$

.....

5. Solve the following system of equations:

$$\begin{aligned}2x + y + z &= 4 \\6x + 0 + z &= 0 \\2x - y + 0 &= 4\end{aligned}\tag{4}$$

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6. Write each of the following equations in matrix form, then use row reduction to solve each system.

$$\begin{aligned}3x_1 + x_2 - 3x_3 &= -4 \\x_1 + x_2 + x_3 &= 1 \\5x_1 + 6x_2 + 8x_3 &= 8\end{aligned}\tag{5}$$

$$\begin{aligned}3x_1 + x_2 + x_3 + 6x_4 &= 14 \\x_1 - 2x_2 + 5x_3 - 5x_4 &= -7 \\4x_1 + x_2 + 2x_3 + 7x_4 &= 17\end{aligned}\tag{6}$$