

In this assignment you will create a system of equations and solve them using an augmented matrix. You'll show your work using Mathtype and utilize your brain to do the row operations. Start by carrying out the Gauss-Jordan Method. Once you have worked out the steps, you document those steps using Mathtype.

1. Create a system of equations that has a solution corresponding to the number of letters in your first and last name. By this I mean that the value for x should correspond to the number of letters in your first name and the value for y should correspond to the number of letters in your last name. For instance, suppose you have a name with 1 letter in the last name and 0 letters in the first name. This corresponds to $(0, 1)$. There are many possible systems of equations. **You will not use the system shown below.** One possibility is

$$x + y = 1$$

$$2x - y = -1$$

Write down your system of equations. Your system may have completely different numbers.

2. Write down the augmented matrix corresponding to your system. It should look something like

$$\left[\begin{array}{cc|c} 1 & 1 & 1 \\ 2 & -1 & -1 \end{array} \right]$$

3. Use the Gauss-Jordan Method to solve this system. Do the row operations to put your augmented matrix in reduced row echelon form. Write down each step like the ones below:

$$-2 R_1 + R_2 > R_2$$

$$\left[\begin{array}{cc|c} 1 & 1 & 1 \\ 0 & -3 & -3 \end{array} \right]$$

$$-1/3 R_2 > R_2$$

$$\left[\begin{array}{cc|c} 1 & 1 & 1 \\ 0 & 1 & 1 \end{array} \right]$$

$$-1 R_2 + R_1 > R_1$$

$$\left[\begin{array}{cc|c} 1 & 0 & 0 \\ 0 & 1 & 1 \end{array} \right]$$

4. Open your word processing program and use Mathtype to show the steps like you see above. Make sure you show the final values that solve the system.
5. Save your document. Make sure it includes your name, the solution, the original system, the augmented matrix and the Gauss-Jordan steps. Attach the file to the Technology Assignment page.