Solve the following system.
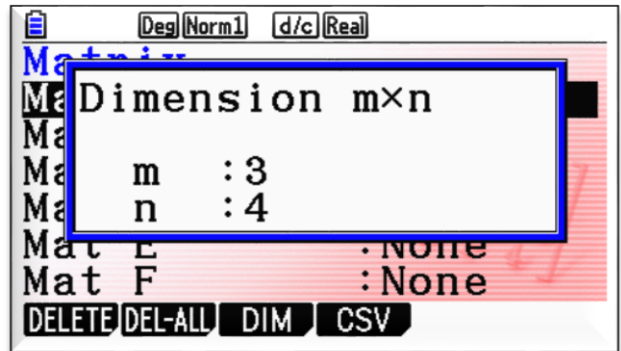
$$2x + 3y + z = 15$$
$$3x + 2y - z = 10$$
$$4x + y + 2z = 15$$

1. **Define your matrix size**

    - press F3 **(>MAT)**. This opens up your matrix list
    - choose the name of the matrix you want by hitting enter on your selection. For this example, we will enter the data into matrix A
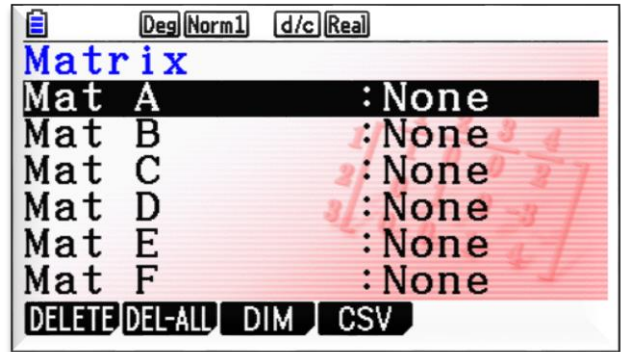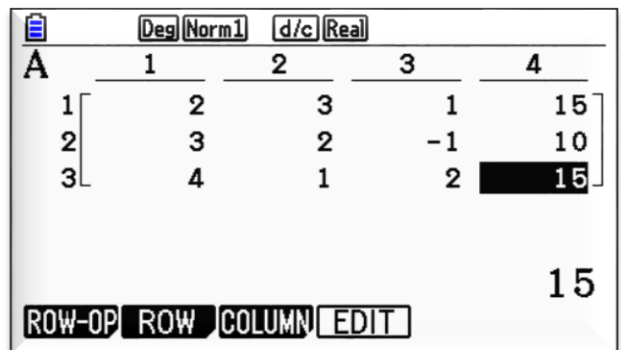

    - when you hit enter, it will ask you for the dimensions of your matrix.
    - we want a 3 x 4 matrix, so enter 3 for m and 4 for n.
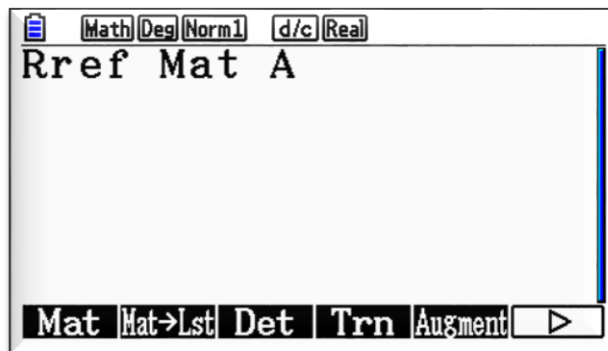   - hit enter **(EXE)**

2. **Fill in your data.**

    - By default, you would enter the top right hand corner and hit enter – you will move along the top row, and then start at the right of the second row when the first is completed
   - be careful to put a 1 in if there is no coefficients, and watch out for your negative numbers

3. **Press EXIT twice to get back to your home screen.**

4. **Press OPTN → F2 (MAT) → F6 →F5 (Rref).**

- This will open up the Rref command in your calculator. Now you have to tell it what matrix to perform the operation on.

5. **Press F6 → F1 (MAT)**

6. **Press Alpha → X, θ, T (A)**

7. **Hit enter.** The reduced matrix will display for you.

If you have another one to do that is the same size, all you have to do is go back to your matrix and change the numbers.

Then, when you go back to your home screen, you can cursor up to the Rref command you have already set up and hit enter. The matrix will update itself with the new information given.
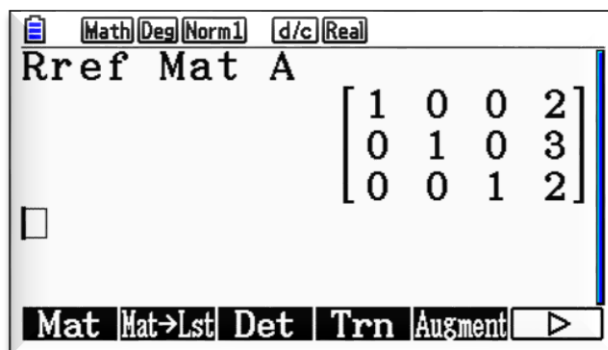
| NOTE |

The purpose of this investigation was to get comfortable with matrix operations. CASIO has a built in equation solver in its menu that does the majority of steps for you.

Menu → Equation → F1.