**Algebra II NAME \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**WS Solving a system of equations using reduced row echelon form in an augmented matrix**

**STEP 1 Write a system of equations as an augmented matrix:**

Write a system of 2 variables and 2 equations in standard form, and rewrite it as a 2x3 matrix:

**Example:  becomes  **

** **

To keep the directions simple, we will refer to the individual entries in your matrix like this: 

**STEP 2 Perform Linear Operations to eliminate coefficients:**

Multiply row 2 by entry “B”. Multiply row 1 by entry “E”. Subtract the results. Call the resulting answer row 3

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B=\_\_\_\_\_\_ R2=\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E=\_\_\_\_\_\_ R1=\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Multiply row 2 by entry “A”. Multiply row1 by entry “D”. Subtract the results. Call the resulting answer row 4.

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**STEP 3 Reduce each row.**

Divide row 3 by the value of entry 1 in row 3.  **\_\_\_\_\_\_\_\_\_\_\_**

Divide row 4 by the value of entry 2 in row 4.  **\_\_\_\_\_\_\_\_\_\_\_**

**STEP 4 Rewrite the matrix.**

Write the following matrix: 

Rewrite that matrix as a system of equations:

**STEP 5 solve each equation in that system:**

x = \_\_\_\_\_ y = \_\_\_\_\_\_

**SOLVING A 3x3 system:**

**STEP 1 Write a 3x3 system of equations as an augmented matrix:**

** Refer to entries as **

**STEP 2 Perform Linear Operations to eliminate coefficients:**

**  **

**STEP 3 Create an intermediate matrix:**

** Refer to entries as **

**STEP 4 Perform more Linear Operations to eliminate coefficients:**

** \_\_\_\_\_\_\_\_\_\_\_\_**

Reduce R7 by dividing the row by entry 3

call the answer R8

** \_\_\_\_\_\_\_\_\_\_\_**

Reduce R9 by dividing the row by entry 1

call the answer R10

** \_\_\_\_\_\_\_\_\_\_\_**

Reduce R11 by dividing the row by entry 2

call the answer R12

**STEP 5 Write the following matrix, and find x, y and z**

** x=\_\_\_\_\_\_ y=\_\_\_\_\_\_\_ z=\_\_\_\_\_\_\_\_**