

### MA162 Worksheet - 3.3

1. Perform the indicated row operations on the following augmented matrix.

$$\left[ \begin{array}{ccc|c} 1 & -1 & 3 & 6 \\ 1 & 0 & 6 & 1 \\ -3 & 2 & 2 & -5 \end{array} \right]$$

- $R_2 \rightarrow R_2 - R_1$
- $R_3 \rightarrow R_3 + 3R_1$

2. Using your result from above, perform the indicated row operations.

- $R_1 \rightarrow R_1 + R_2$
- $R_3 \rightarrow R_3 + R_2$

3. Using your result from above, perform the indicated row operations.

- $\frac{1}{14}R_3$
- $R_1 \rightarrow R_1 - 6R_3$  •
- $R_2 \rightarrow R_2 - 3R_3$

4. The original augmented matrix corresponds to a system of three equations in three variables. Assuming the variables are  $x, y$  and  $z$ , write and solve the system of equations given by the original augmented matrix. (Solutions will be fractions)

5. Compare the matrix in #3 to the solutions in #4. What do you notice!?