

Full Name: _____

1. Consider the system of linear equations

$$\begin{array}{rcl} & x_4 + 2x_5 - x_6 & = 2 \\ x_1 + 2x_2 & & + x_5 - x_6 = 0 \\ x_1 + 2x_2 + 2x_3 & & - x_5 + x_6 = 2 \end{array}$$

- (a) Write down the augmented matrix and transform it into its Reduced Echelon Form. Show the operations performed at each step.
- (b) Which ones are the basic variables and which ones are free variables?
- (c) What is the rank of the coefficient matrix?
- (d) Find the general set of solutions.

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