Linear. Quiz 1a. Name _____ Time_____
Show all work on this page for full and/or partial credit. Put a box around your final answers in each part.

1. Next to each augmented matrix in r.r.e.f., write the solution using the correct number of variables $x_1, x_2, x_3, \ldots$, making sure to solve for the non-free variables and state which variables are free.

$$\left[\begin{array}{ccc|c} 1 & 0 & 4 & -3 \\ 0 & 1 & 2 & 7 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{array}\right]$$

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$$\left[\begin{array}{ccccc|c} 1 & 0 & 0 & 4 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{array}\right]$$

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$$\left[\begin{array}{cccccccc|c} 1 & 0 & 0 & 0 & 0 & 0 & 4 & 0 & 7 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -6 \end{array}\right]$$

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2. Solve this system of equations using a matrix. You must write it as an augmented matrix, reduce it to row echelon form, and then write the answer, including which of the four variables are free.

$$\left\{\begin{array}{c} 5x_1 + 15x_4 = 5 \\ 2x_2 + 4x_3 = -8 \\ -x_2 - 2x_3 = 4 \end{array}\right\}$$