Name: _____

Section: _____

1. Use row reduction to solve the following system of linear equations, or show that there are no solutions.

$$\begin{cases} x + 2y + z = 0 \\ 2x - 3y + 4z = -2 \\ 3x - y + 4z = -1 \end{cases}$$

2. Put the following matrix in reduced row echelon form. If this were the augmented matrix of a linear system, how many free variables would the solution have?

$$\begin{bmatrix} 1 & 1 & 1 & 12 \\ 2 & 1 & 1 & 4 \end{bmatrix}$$