

Name: _____

Directions: Show all work. No credit for answers without work.

1. [6 points] Find the general solution of the system with the following augmented matrix.

$$\left[\begin{array}{cccccc} 3 & 0 & -3 & 6 & -2 & -3 \\ 3 & 0 & -3 & 6 & -3 & -6 \\ 10 & 1 & -6 & 21 & -3 & 3 \\ -8 & 0 & 8 & -16 & 3 & 1 \end{array} \right]$$

2. **[2 parts, 1.5 points each]** Let A be a (8×4) -matrix such that each of the four columns is a pivot column.

(a) Give the *reduced row-echelon form* of A .

(b) Describe the *row-echelon form(s)* of A .

3. **[1 point]** Let A be an $(m \times n)$ augmented matrix that represents a linear system with a unique solution. What can be said about the relationship between m and n ?