

Full Name: _____

Section time: 10am 12pm

Homework 2 Due Wed Aug 31, 2016 Math 313 (Gillette)

1. Below is the augmented matrix of a linear system. Use elementary row operations to reduce it further. Describe the solution set of the original system.

$$\begin{bmatrix} 1 & -4 & 9 & 0 \\ 0 & 1 & 7 & 0 \\ 0 & 0 & 2 & 0 \end{bmatrix}$$

2. Find the general solution of the following linear system. Pay attention to the variables!

$$x_1 - 7x_2 + 6x_4 = 5$$

$$x_3 - 2x_4 = -3$$

$$-x_1 + 7x_2 - 4x_3 + 2x_4 = 7$$

3. True or false: **Elementary row operations on an augmented matrix never change the solution set of the associated linear system.** (If you answer true, justify your answer by referring to a place in the text that supports your answer. If you answer false, give an example to show that it is false.)

4. Determine the value(s) of h such that the matrix below is the augmented matrix of a consistent linear system.

$$\begin{bmatrix} 1 & -3 & -2 \\ 5 & h & -7 \end{bmatrix}$$