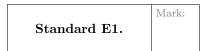
Name:	
J#:	Dr. Clontz
Date:	

MASTERY QUIZ DAY 6

Math 237 – Linear Algebra Fall 2017

Version 4

Show all work. Answers without work will not receive credit. You may use a calculator, but you must show all relevant work to receive credit for a standard.



Write an augmented matrix corresponding to the following system of linear equations.

$$x_1 + 4x_3 = 1$$
$$x_2 - x_3 = 7$$
$$x_1 - x_2 + 3x_3 = -1$$

Solution:

$$\begin{bmatrix} 1 & 0 & 4 & 1 \\ 0 & 1 & -1 & 7 \\ 1 & -1 & 3 & -1 \end{bmatrix}$$

Standard E3.

Mark:

Find the solution set for the following system of linear equations.

$$2x_1 + 3x_2 - 5x_3 + 14x_4 = 8$$
$$x_1 + x_2 - x_3 + 5x_4 = 3$$

Solution: Let $A = \begin{bmatrix} 2 & 3 & -5 & 14 & 8 \\ 1 & 1 & -1 & 5 & 3 \end{bmatrix}$, so RREF $A = \begin{bmatrix} 1 & 0 & 2 & 1 & 1 \\ 0 & 1 & -3 & 4 & 2 \end{bmatrix}$. It follows that the solution set is given by $\begin{bmatrix} 2-2a-b \\ 2+3a-4b \\ a \\ b \end{bmatrix}$ for all real numbers a,b.

Standard E4.

Solve the following linear system.

$$3x + 2y + z = 0$$
$$x + y + z = 0$$

