

Name:
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Date:

Dr. Clontz

# MASTERY QUIZ DAY 8

Math 237 – Linear Algebra

## Version 2

Fall 2017

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.

<b>Standard E1.</b>	Mark:
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Write an augmented matrix corresponding to the following system of linear equations.

$$\begin{aligned}x_1 + 4x_3 &= 1 \\x_2 - x_3 &= 7 \\x_1 - x_2 + 3x_4 &= -1\end{aligned}$$

<b>Standard E3.</b>	Mark:
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Solve the system of equations

$$\begin{aligned}x + 3y - 4z &= 5 \\3x + 9y + z &= 2\end{aligned}$$

<b>Standard E4.</b>	Mark:
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Find a basis for the solution set of the system ...

<b>Standard V1.</b>	Mark:
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Let  $V$  be the set of all real numbers together with the operations  $\oplus$  and  $\odot$  defined by, for any  $x, y \in V$  and  $c \in \mathbb{R}$ ,

$$\begin{aligned}x \oplus y &= x + y - 3 \\c \odot x &= cx - 3(c - 1)\end{aligned}$$

Determine if  $V$  is a vector space or not.