

Name:
J#:
Date:

Dr. Clontz

MASTERY QUIZ DAY 10

Math 237 – Linear Algebra

Version 6

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.

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

$$x + 3y - 4z = 5$$

$$3x + 9y + z = 0$$

$$x - z = 1$$

Standard E3.	Mark:
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Find the solution set for the following system of linear equations.

$$2x_1 - 2x_2 + 6x_3 - x_4 = -1$$

$$3x_1 + 6x_3 + x_4 = 5$$

$$-4x_1 + x_2 - 9x_3 + 2x_4 = -7$$

Standard E4.	Mark:
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Find a basis for the solution set of the system of equations

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

$$3x - y + z + w = 0$$

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

Standard V1.	Mark:
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Let V be the set of all polynomials with the operations, for any $f, g \in V$, $c \in \mathbb{R}$,

$$f \oplus g = f' + g'$$

$$c \odot f = cf'$$

(here f' denotes the derivative of f).

(a) Show that this scalar multiplication \odot distributes over vector addition \oplus .

(b) Determine if V is a vector space or not. Justify your answer.

Additional Notes/Marks	
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