Name:	
J#:	Dr. Clontz
Date:	

MASTERY QUIZ DAY 12 Math 237 – Linear Algebra
Version 5 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 V1.	Mark:

Let V be the set of all points on the line $x+y=2$ with the operations, for any $(x_1,y_1),(x_2,y_2)\in V$, $c\in\mathbb{R}$,

$$(x_1,y_1)\oplus(x_2,y_2)=(x_1+x_2-1,y_1+y_2-1)$$
$$c\odot(x_1,y_1)=(cx_1-(c-1),cy_1-(c-2))$$

Determine if V is a vector space or not.

Standard V3.	Mark:

Determine if the vectors $\begin{bmatrix}2\\0\\-2\\0\end{bmatrix}$, $\begin{bmatrix}3\\1\\3\\6\end{bmatrix}$, $\begin{bmatrix}0\\0\\1\\1\end{bmatrix}$, and $\begin{bmatrix}1\\2\\0\\1\end{bmatrix}$ span $\mathbb{R}^4$.

Standard V4.	Mark:

Determine if the set of all lattice points, i.e. $\{(x, y) \mid x \text{ and } y \text{ are integers}\}$ is a subspace of $\mathbb{R}^2$.

Additional Notes/Marks	