Name:	
J#:	Dr. Clontz
Date:	

## MASTERY QUIZ DAY 12

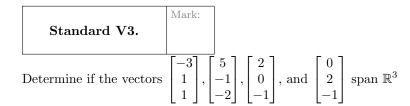
Math 237 – Linear Algebra Fall 2017

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.

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  $c\in\mathbb{R}$ ,

$$x \oplus y = x + y - 3$$
$$c \odot x = cx - 3(c - 1)$$

- (a) Show that this scalar multiplication  $\odot$  is associative.
- (b) Determine if V is a vector space or not. Justify your answer



Standard V4.	Mark:
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Let W be the set of all polynomials of even degree. Determine if W is a subspace of the vector space of all polynomials.