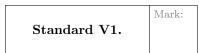
Name:	
J#:	Dr. Clontz
Date:	

## MASTERY QUIZ DAY 14

Math 237 – Linear Algebra Fall 2017

## Version 1

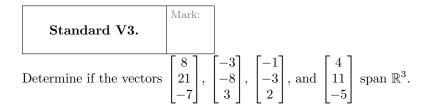
Show all work. Answers without work will not receive credit. You may use a calculator, but you must show all relevant work to receive credit for a standard.



Let V be the set of all real numbers with the operations, for any  $x, y \in V$ ,  $c \in \mathbb{R}$ ,

$$x \oplus y = \sqrt{x^2 + y^2}$$
$$c \odot x = cx$$

- (a) Show that the vector addition  $\oplus$  is associative:  $x \oplus (y \oplus z) = (x \oplus y) \oplus z$ .
- (b) Determine if V is a vector space or not. Justify your answer.



Standard V4.	Mark:

Let W be the set of all complex numbers a+bi satisfying a=2b. Determine if W is a subspace of  $\mathbb{C}$ .

Determine if the set 
$$\left\{ \begin{bmatrix} 0\\1\\1\\1 \end{bmatrix}, \begin{bmatrix} 1\\-1\\0\\2 \end{bmatrix}, \begin{bmatrix} 1\\0\\-1\\0 \end{bmatrix}, \begin{bmatrix} 0\\2\\0\\-1 \end{bmatrix} \right\}$$
 is a basis of  $\mathbb{R}^4$ .

Additional Notes/Marks