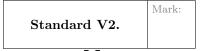
| Name: |            |
|-------|------------|
| J#:   | Dr. Clontz |
| Date: |            |

## MASTERY QUIZ DAY 11

Math 237 – Linear Algebra Fall 2017

Version 6

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.



Determine if  $\begin{bmatrix} 1\\4\\3 \end{bmatrix}$  is a linear combination of the vectors  $\begin{bmatrix} 3\\0\\-1 \end{bmatrix}$ ,  $\begin{bmatrix} 1\\-1\\4 \end{bmatrix}$ , and  $\begin{bmatrix} 5\\1\\-6 \end{bmatrix}$ .

Solution:

RREF 
$$\left( \begin{bmatrix} 3 & 1 & 5 & 1 \\ 0 & -1 & 1 & 4 \\ -1 & 4 & -6 & 3 \end{bmatrix} \right) = \begin{bmatrix} 1 & 0 & 2 & 0 \\ 0 & 1 & -1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

So  $\begin{bmatrix} 1 \\ 4 \\ 3 \end{bmatrix}$  is not a linear combination of the three vectors.

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