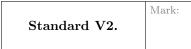
Name:	
J#:	Dr. Clontz
Date:	

MASTERY QUIZ DAY 9

Math 237 – Linear Algebra Fall 2017

Version 4

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 $\begin{bmatrix} 2\\3\\-1 \end{bmatrix}$, $\begin{bmatrix} 1\\-1\\0 \end{bmatrix}$, and $\begin{bmatrix} -3\\-2\\5 \end{bmatrix}$.

Solution:

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

Since this system has a solution, $\begin{bmatrix} 1 \\ 4 \\ 3 \end{bmatrix}$ is a linear combination of the three vectors.