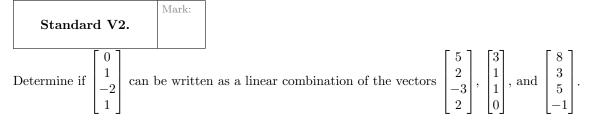
Name:	
J#:	Dr. Clontz
Date:	

## MASTERY QUIZ DAY 13

Math 237 – Linear Algebra Fall 2017

Version 2

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.



Solution:

$$RREF \left( \begin{bmatrix} 8 & 5 & 3 & 0 \\ 3 & 2 & 1 & 1 \\ 5 & -3 & 1 & -2 \\ -1 & 2 & 0 & 1 \end{bmatrix} \right) = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

The system has no solution, so  $\begin{bmatrix} 0\\1\\-2\\1 \end{bmatrix}$  is not a linear combination of the three other vectors.

Standard S1. 
$$\begin{bmatrix} 1\\1\\-1 \end{bmatrix}, \begin{bmatrix} 3\\-1\\1 \end{bmatrix}, \text{ and } \begin{bmatrix} 2\\0\\-2 \end{bmatrix} \text{ are linearly dependent or linearly independent}$$

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

Since each column is a pivot column, the vectors are linearly independent.