Name:	
J#:	Dr. Clontz
Date:	

MASTERY QUIZ DAY 18 Math 237 – Linear Algebra
Version 3 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.

Standard S1.	Mark:

Determine if the set of polynomials $\left\{x^3-8x, x^3+2x^2+2, -x^2+3\right\}$ is linearly dependent or linearly independent

Standard S3.	Mark:

Let $W=\text{span}\left(\left\{\begin{bmatrix}1\\1\\2\\1\end{bmatrix},\begin{bmatrix}3\\3\\6\\3\end{bmatrix},\begin{bmatrix}3\\-1\\3\\-2\end{bmatrix},\begin{bmatrix}7\\-1\\8\\-3\end{bmatrix}\right\}\right)$. Find a basis for W.

Standard S4.	Mark:

Let $W = \text{span}\left(\left\{\begin{bmatrix}-3\\-8\\0\end{bmatrix}, \begin{bmatrix}1\\2\\2\end{bmatrix}, \begin{bmatrix}0\\-1\\3\end{bmatrix}\right\}\right)$. Compute the dimension of W.

Standard A1.	Mark:

Let $T : \mathbb{R}^4 \to \mathbb{R}^2$ be the linear transformation given by

$$T\left(\begin{bmatrix}x_1\\x_2\\x_3\\x_4\end{bmatrix}\right) = \begin{bmatrix}x_1 + 3x_3\\3x_2 - x_3\end{bmatrix}$$

. Write the matrix for T with respect to the standard bases of $\mathbb{R}^4$ and $\mathbb{R}^2$.

Standard A2.	Mark:

Determine if $D : M_{2,2} \to \mathbb{R}$ given by $D\left(\begin{bmatrix} a & b \\ c & d \end{bmatrix}\right) = ad - bc$ is a linear transformation or not.

Additional Notes/Marks	