Name:	
J#:	Dr. Clontz
Date:	

MASTERY QUIZ DAY 18

Math 237 – Linear Algebra Fall 2017

Version 2 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.

Determine if the set of matrices $\left\{ \begin{bmatrix} 3 & -1 \\ 0 & 4 \end{bmatrix}, \begin{bmatrix} 1 & 2 \\ -2 & 1 \end{bmatrix}, \begin{bmatrix} 3 & -8 \\ 6 & 5 \end{bmatrix} \right\}$ is linearly dependent or linearly independent.

Standard S3.
$$\begin{bmatrix} & & & \\ & & & & \\ & &$$

Standard S4. Mark:

Let W be the subspace of \mathcal{P}_3 given by $W = \operatorname{span}\left(\left\{x^3 - x^2 + 3x - 3, 2x^3 + x + 1, 3x^3 - x^2 + 4x - 2, x^3 + x^2 + x - 7\right\}\right)$. Compute the dimension of W.

Standard A1.

Mark:

Let $T: \mathbb{R}^3 \to \mathbb{R}$ be the linear transformation given by

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

. Write the matrix for T with respect to the standard bases of \mathbb{R}^3 and \mathbb{R} .

Standard A2.	Mark:

Determine if the map $T: \mathcal{P}^4 \to \mathcal{P}^3$ given by T(f) = f' - f'' is a linear transformation or not.

Additional Notes/Marks