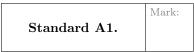
Name:	
J#:	Dr. Clontz
Date:	

MASTERY QUIZ DAY 24

Math 237 – Linear Algebra Fall 2017

Version 3

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.



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

Standard M1.

Mark:

Let

$$A = \begin{bmatrix} 1 & 3 & -1 \\ 0 & 0 & 7 \end{bmatrix} \qquad B = \begin{bmatrix} 0 & 1 & 7 & 7 \\ -1 & -2 & 0 & 4 \\ 0 & 0 & 1 & 5 \end{bmatrix} \qquad C = \begin{bmatrix} 3 \\ 1 \end{bmatrix}$$

Exactly one of the six products AB, AC, BA, BC, CA, CB can be computed. Determine which one, and compute it.

Standard M2.	Ма	rk:			
Determine if the matrix	$\begin{bmatrix} 2 \\ 1 \\ 3 \\ 4 \end{bmatrix}$	1 -1 2 1	$\begin{array}{c} 0 \\ 0 \\ -1 \\ 2 \end{array}$	$\begin{bmatrix} 3 \\ 1 \\ 7 \\ 0 \end{bmatrix}$	is invertible.

Standard M3.

Mark:

Find the inverse of the matrix $\begin{bmatrix} 6 & 0 & 1 \\ -14 & 3 & -4 \\ -23 & 4 & -6 \end{bmatrix}$.

Additional Notes/Marks