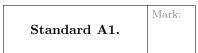
Name:	
J#:	Dr. Clontz
Date:	

MASTERY QUIZ DAY 22

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.



Let $T: \mathbb{R}^3 \to \mathbb{R}^4$ be the linear transformation given by

$$T\left(\begin{bmatrix} x \\ y \\ z \end{bmatrix}\right) = \begin{bmatrix} -3x + y \\ -8x + 2y - z \\ 7x + 2y + 3z \\ 0 \end{bmatrix}.$$

Write the matrix for T with respect to the standard bases of \mathbb{R}^3 and \mathbb{R}^4 .

Standard A2.

Mark:

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

Standard M1.

Mark:

Let

$$C = \begin{bmatrix} 2 & 3 \\ 0 & 1 \end{bmatrix} \qquad \qquad D = \begin{bmatrix} 3 & 1 & 0 \end{bmatrix} \qquad \qquad E = \begin{bmatrix} 2 & 0 \\ 0 & -1 \\ 1 & -1 \end{bmatrix}$$

Determine which of the six products CD, CE, DC, DE, EC, ED can be computed, and compute them.

Additional Notes/Marks