Name:
J#:
Date:

Dr. Clontz

MASTERY QUIZ DAY 25 Math 237 – Linear Algebra
Version 1 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 A3.	Mark:

Determine if each of the following linear transformations is injective (one-to-one) and/or surjective (onto).

(a) $S:\mathbb{R}^2\to\mathbb{R}^4$ given by the standard matrix $\begin{bmatrix}2&1\\1&2\\0&1\\3&-3\end{bmatrix}$.

(b) $T:\mathbb{R}^4\to\mathbb{R}^3$ given by the standard matrix $\begin{bmatrix}2&3&-1&1\\-1&1&1&1\\4&7&-1&5\end{bmatrix}$

Standard A4.	Mark:

Let $T:\mathbb{R}^{2\times 3}\to\mathbb{R}^3$ be the linear map given by $T\left(\begin{bmatrix}a&b&c\\x&y&z\end{bmatrix}\right)=\begin{bmatrix}a+x\\b+y\\c+z\end{bmatrix}$. Compute a basis for the kernel and a basis for the image of T.

Additional Notes/Marks	