

QUIZ NUMBER 10 FOR MTH 221 AT 1 PM

AYMAN BADAWI

Name _____, Id. Num. _____, Score $\frac{\quad}{15}$

QUESTION 1. Let $T : \mathbb{R}^2 \rightarrow \mathbb{R}^3$ be a linear Transformation such that $T\left(\begin{bmatrix} b_1 \\ b_2 \end{bmatrix}\right) =$

$$\begin{bmatrix} b_1 - 2b_2 \\ -b_1 + 3b_2 \\ -b_2 \end{bmatrix}$$

1) Find the standard matrix Representation of T .

2) Find a basis for $\text{Ker}(T)$.

3) Find a basis for $\text{Range}(T)$.

DEPARTMENT OF MATHEMATICS & STATISTICS, AMERICAN UNIVERSITY OF SHARJAH, P.O. BOX
26666, SHARJAH, UNITED ARAB EMIRATES
E-mail address: abadawi@aus.edu, www.ayman-badawi.com