ADDITIONAL HOMEWORK PROBLEMS

MATH 22

Find a basis for the Range of T. Compute its dimension and determine whether T is one-to-one and onto. $T : M_{2\times 3} \to M_{2\times 2}$ defined by

$$T \begin{bmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \end{bmatrix} = \begin{bmatrix} 2a_{11} - a_{12} & a_{13} + 2a_{12} \\ 0 & 0 \end{bmatrix}.$$