Submitting HW Tips

HW # 6

1 **TRUE or FALSE** Question: Page 156: # **3.1, 3.10** .

2 Which transformations T are **Linear Transformations (LT)** ?

(a) $T : M(2,2) \longrightarrow \mathbb{R}$, defined by $T(A) = \text{rank}\,(A)$.

(b) $T : \mathcal{C}(\mathbb{R}) \longrightarrow \mathbb{R}$, defined by $T\Big(f(t)\Big) = \displaystyle\int_0^R f(t)\, e^{-st} dt$, where $R > 0$, $s > 0$ are fixed positive numbers.

(c) $T : \mathbb{R}^2 \longrightarrow \mathbb{R}_3$, defined by $T\left(\begin{bmatrix} x \\ y \end{bmatrix}\right) = \begin{bmatrix} (x+y) & 0 & (-3x) \end{bmatrix}$.

(d) $T : \mathbb{R}^2 \longrightarrow \mathcal{P}_2$, defined by $T\left(\begin{bmatrix} a \\ b \end{bmatrix}\right) = a + bx + x^2$.

3 Page 160: # **3.15(b)** $\leftarrow$ just find the Matrix Representation for T.

4 **TRUE or FALSE** Question: Page 173: # **3.12** .

5 Page 190: # **3.64(a)(c)**.