CSCI 2820: Linear Algebra
Assignment 6

The question numbers are based on the edition given on Canvas (Exercises from Chapter 6).

- Question **6.5** - (**4** points)

- Question **6.12 (b),(c)** - (**6** points, 2 points for (b), 4 points for (c)) (Another hint for part (c) is that the inner product $a^T b = 0$ iff a and b are orthogonal)

- Question **6.18** - (**6** points), You are also given the fact that $m \geq n$ (This is not mentioned in the question but is an important condition for your proof)

- Let $x = \begin{bmatrix} 1 \\ 0 \end{bmatrix}$ and $y = \begin{bmatrix} 0 \\ 1 \end{bmatrix}$. You need to determine if the vectors, Ax and Ay are linearly independent, dependent, or if this fact cannot be determined when

  (a) $A = \begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$

  (b) $A = \begin{bmatrix} 3 & 3 \\ 4 & 4 \end{bmatrix}$

  (**4** points , 2 each for (a), (b)).