

Problem 1. (2020 Fall Midterm - 16 points) Let

$$A = \begin{bmatrix} 0 & 1 & 2 & 3 & 4 \\ 0 & 1 & 2 & 4 & 6 \\ 0 & 0 & 0 & 1 & 2 \end{bmatrix}$$

Please give a basis for each of the four fundamental subspaces $C(A)$, $N(A)$, $C(A^T)$, $N(A^T)$.

Problem Set 3

October 17, 2022

Problem 2. (2019 Fall Midterm - 14 points) Let

$$A = \begin{bmatrix} 1 & 2 & 1 & 0 & 0 \\ 1 & 2 & 2 & 2 & 3 \\ -1 & -2 & 0 & 2 & 3 \end{bmatrix}$$

Determine the dimension and also give a basis for each of the four fundamental subspaces $C(A)$, $N(A)$, $C(A^T)$, $N(A^T)$.