Mon Tue Wed Thu Fri Sat Sun

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BSSE23058 Date: 4

$A_2 = \begin{bmatrix} 1 & 1 & 0 \\ 1 & 3 & 1 \\ 3 & 1 & -1 \end{bmatrix}$

(a) Dimension of $C(A)_2$?

$\begin{bmatrix} 1 & 1 & 0 \\ 1 & 3 & 1 \\ 3 & 1 & -1 \end{bmatrix}$ $R2 \leftarrow R2 - R1$, $R3 \leftarrow R3 - (3)R1$ $\begin{bmatrix} 1 & 1 & 0 \\ 0 & 2 & 1 \\ 0 & -2 & -1 \end{bmatrix}$ $R2 \leftarrow \frac{R2}{2}$

$\begin{bmatrix} 1 & 1 & 0 \\ 0 & 1 & \frac{1}{2} \\ 0 & -2 & -1 \end{bmatrix}$ $R3 \leftarrow R3 + 2R2$. $\begin{bmatrix} 1 & 1 & 0 \\ 0 & 1 & \frac{1}{2} \\ 0 & 0 & 0 \end{bmatrix}$

$-2 + 2 = 0$, $-1 + 2(\frac{1}{2})$

(10)

(b) ~~Dimension of $C(A^T)$~~

$A_2 = \begin{bmatrix} (1) & 1 & 0 \\ 0 & (1) & \frac{1}{2} \\ 0 & 0 & 0 \end{bmatrix}$ Rank = 2

Dimension = 2

(b) Column space of A.

$\begin{bmatrix} (1) & 1 & 0 \\ 0 & (2) & 1 \\ 2 & 0 & 0 \end{bmatrix}$ Rank = 2.

Dimension = 2.