A Previous Example

Recall that for

$$A = \begin{bmatrix} 1 & 3 & 3 & 2 \\ 2 & 6 & 9 & 7 \\ -1 & -3 & 3 & 4 \end{bmatrix}$$

we have

$$\begin{bmatrix} 3 \\ 6 \\ -3 \end{bmatrix} = 3 \begin{bmatrix} 1 \\ 2 \\ -1 \end{bmatrix} \quad \text{and} \quad \begin{bmatrix} 2 \\ 7 \\ 4 \end{bmatrix} = \begin{bmatrix} 3 \\ 9 \\ 3 \end{bmatrix} - \begin{bmatrix} 1 \\ 2 \\ -1 \end{bmatrix}$$

and therefore two columns of A are redundant. That is $C(A)$ can equally be described as the set of all linear combos of the two vectors:

$$\begin{bmatrix} 1 \\ 2 \\ -1 \end{bmatrix} \quad \text{and} \quad \begin{bmatrix} 3 \\ 9 \\ 3 \end{bmatrix}$$