

Note on TU matrices

A submatrix of $A \in \mathbb{R}^{m \times n}$ is any matrix obtained by taking a subset of the rows and columns.

examples

• $A = \begin{bmatrix} \boxed{1} & \boxed{2} & \boxed{3} \\ \boxed{4} & \boxed{6} & \boxed{6} \\ \boxed{7} & \boxed{8} & \boxed{9} \end{bmatrix}$, $\begin{bmatrix} \boxed{1} & \boxed{2} \\ \boxed{4} & \boxed{5} \end{bmatrix}$ is a submatrix

• $A = \begin{bmatrix} \boxed{1} & 2 & \boxed{3} \\ 4 & 5 & 6 \\ \boxed{7} & 8 & \boxed{9} \end{bmatrix}$, $\begin{bmatrix} \boxed{1} & \boxed{3} \\ \boxed{7} & \boxed{9} \end{bmatrix}$ is a submatrix

• $A = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix}$, $\begin{bmatrix} 1 & 6 \\ 4 & 9 \end{bmatrix}$ is not a submatrix