

## 1 | **A real valued matrix**

$$\text{Let } A = \begin{pmatrix} 2 & 1 \\ 3 & 2 \end{pmatrix}$$

$$A^T A = \begin{pmatrix} 2 & 3 \\ 1 & 2 \end{pmatrix} \begin{pmatrix} 2 & 1 \\ 3 & 2 \end{pmatrix}$$