

$$F = \begin{pmatrix} 5 & 0 & 0 \\ 0 & -10 & 0 \\ 0 & 0 & 7 \end{pmatrix} \Rightarrow \text{Diagonal matrix}$$

4.2.

$$a) \quad A = \begin{pmatrix} 2 & 3 & 4 \\ -1 & 0 & 2 \end{pmatrix} \Rightarrow A^T = \begin{pmatrix} 2 & -1 \\ 3 & 0 \\ 4 & 2 \end{pmatrix}$$

$A_{(2,3)}$

$A^T_{(3,2)}$

$$a) \quad A = \begin{pmatrix} 2 & -1 & 3 \\ -2 & 0 & 1 \end{pmatrix}; \quad B = \begin{pmatrix} 1 & 0 & 1 \\ -1 & 2 & 2 \\ 0 & 3 & 1 \end{pmatrix}$$

$$\Rightarrow A \cdot B = \begin{pmatrix} 3 & 7 & 3 \\ -2 & 3 & -1 \end{pmatrix}$$

b)

$$A = \begin{pmatrix} 2 & -1 \\ 3 & 4 \end{pmatrix}; \quad B = \begin{pmatrix} 1 & -1 \\ 6 & 5 \end{pmatrix}$$

$$A \cdot B = \begin{pmatrix} -4 & -7 \\ 27 & 17 \end{pmatrix}$$

$$B \cdot A = \begin{pmatrix} -1 & -5 \\ 27 & 14 \end{pmatrix}$$