



**App.1** assuming the matrix  $a$  is defined in MATLAB already

$$a = \begin{pmatrix} 8 & 1 & 6 \\ 3 & 5 & 7 \\ 4 & 9 & 2 \end{pmatrix}$$

Based on the given matrix  $a$ , find or give the relation and the commands that generates the following matrices.

$$a = \begin{pmatrix} 8 & 1 & 6 \\ 3 & 5 & 7 \\ 4 & 9 & 2 \end{pmatrix} \Rightarrow b = \begin{pmatrix} 77 & 8 & 1 & 6 \\ 77 & 3 & 5 & 7 \\ 77 & 4 & 9 & 2 \end{pmatrix}$$

$$a = \begin{pmatrix} 8 & 1 & 6 \\ 3 & 5 & 7 \\ 4 & 9 & 2 \end{pmatrix} \Rightarrow c = \begin{pmatrix} 8 & 1 & 6 & 1 \\ 3 & 5 & 7 & 1 \\ 4 & 9 & 2 & 1 \end{pmatrix}$$

$$a = \begin{pmatrix} 8 & 1 & 6 \\ 3 & 5 & 7 \\ 4 & 9 & 2 \end{pmatrix} \Rightarrow d = \begin{pmatrix} 0 & 0 & 0 \\ 8 & 1 & 6 \\ 3 & 5 & 7 \\ 4 & 9 & 2 \end{pmatrix}$$



$$a = \begin{pmatrix} 8 & 1 & 6 \\ 3 & 5 & 7 \\ 4 & 9 & 2 \end{pmatrix} \Rightarrow e = \begin{pmatrix} 8 & 1 & 6 \\ 3 & 5 & 7 \\ 4 & 9 & 2 \\ 0 & 0 & 0 \end{pmatrix}$$