

Numpy - 3

• \vec{z}

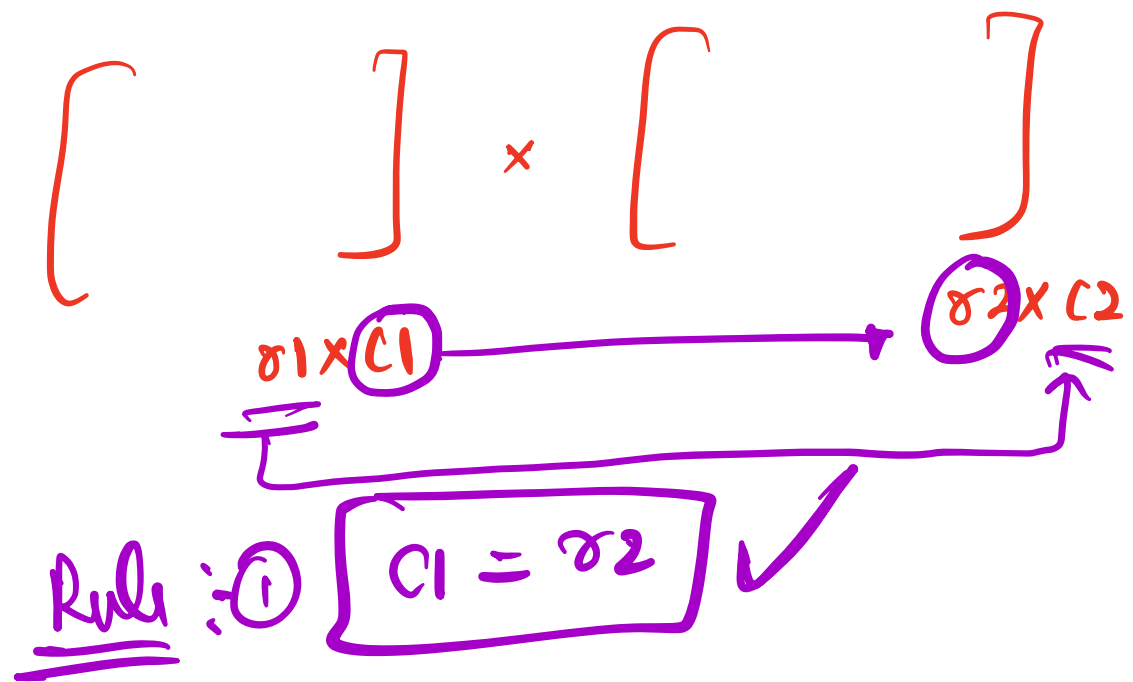
~ Aditya Jain
(AJ)

$a = \begin{matrix} & 0 & 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ [4, & 7, & 0, & 3, & 8, & 2, & 5, & 1, & 6, & 9] \end{matrix}$

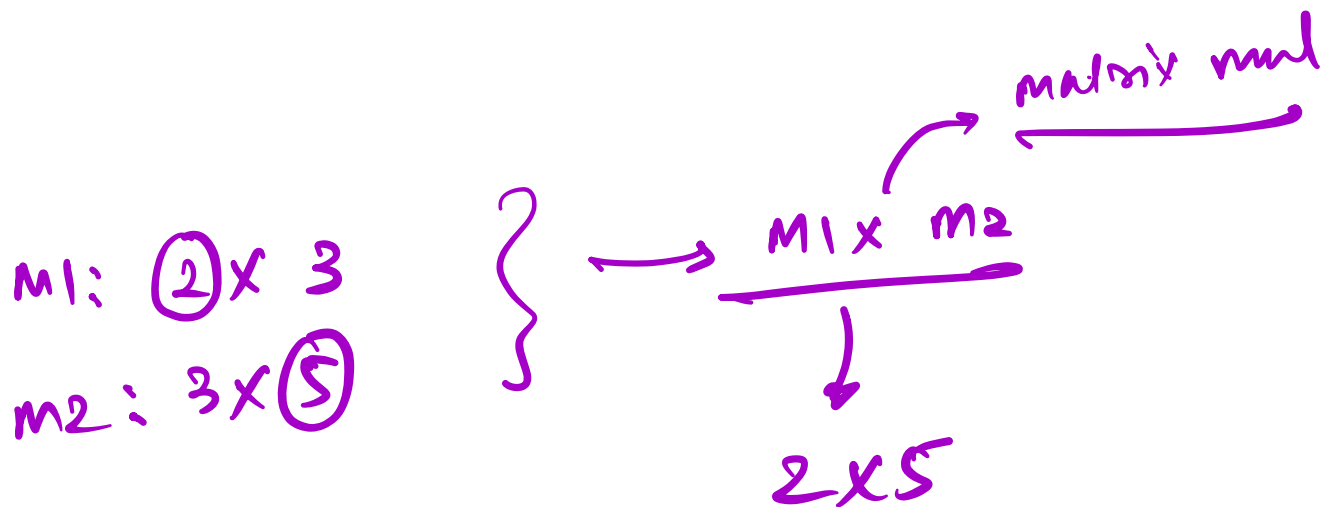
$\rightarrow b = [0, 1, 2, 3, 4, 5, 6, 7, 8, 9]$
 $\quad \quad \quad 2, 7, 5, 3$

$b = \begin{matrix} & 0 & 1 & 2 & 3 & 4 \\ [5, & 7, & 3, & 1, & 10] \end{matrix}$

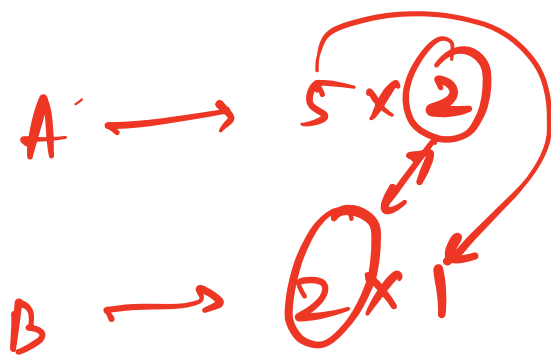
$\rightarrow [1, 3, 5, 7, 10]$
 $\quad \quad \quad 3, 2, 0, 1, 4$



② Result: $81 \times C2$



$m1: 2 \times 4$
 $m2: 2 \times 4$ } \rightarrow mat mul NOT possible



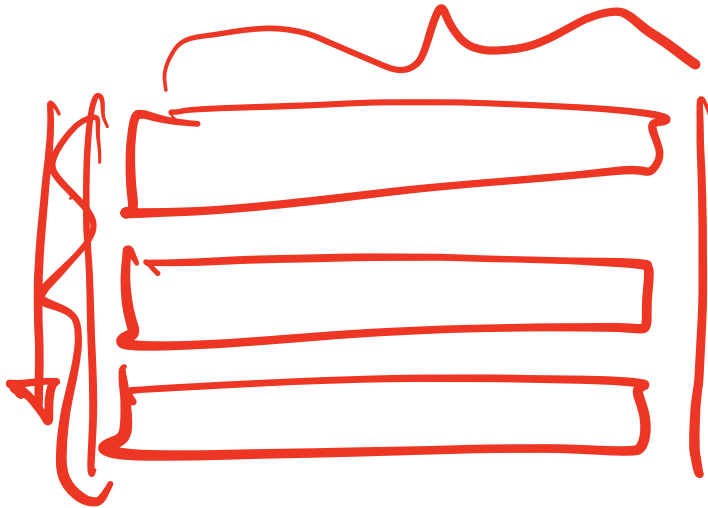
$$\text{np.dot}(A, B) \rightarrow A @ B$$

\downarrow

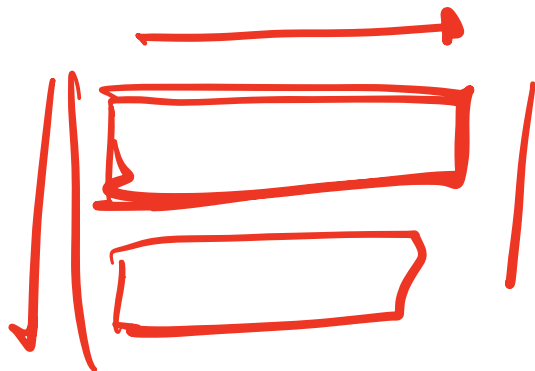
$$5 \times 1$$

$a = [0 \mid 10 \mid 20 \mid 30]$

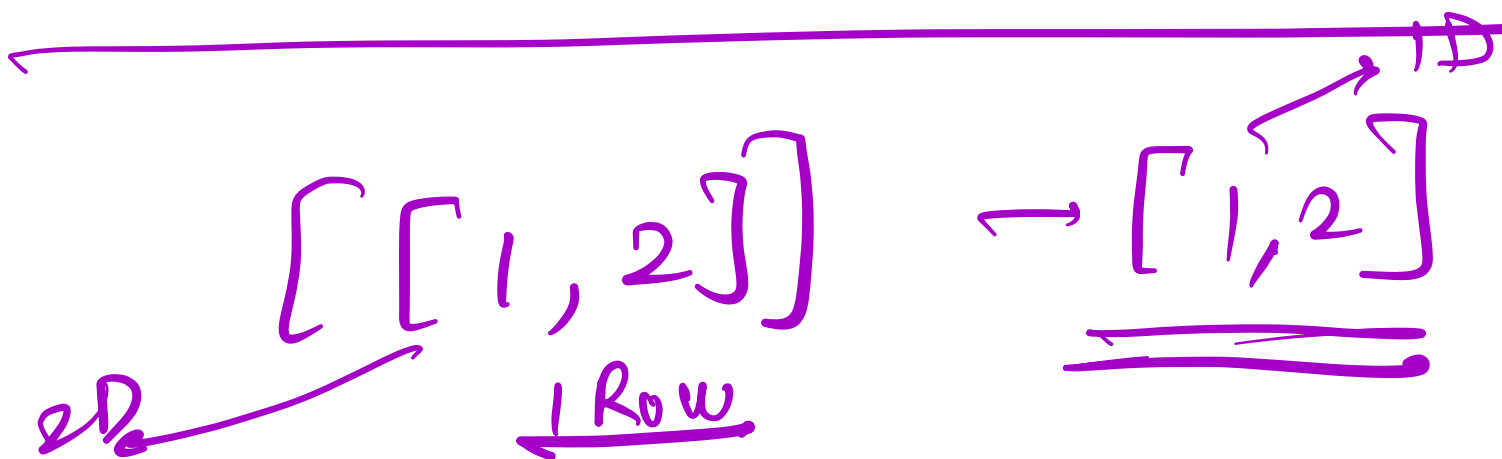
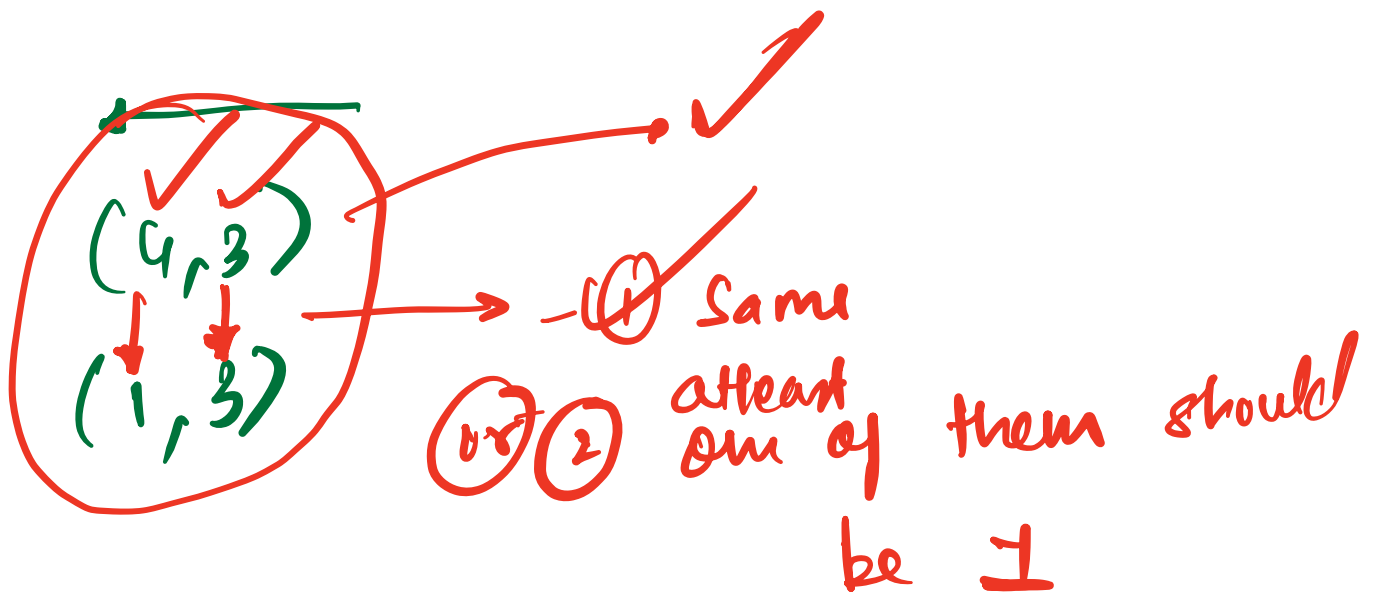
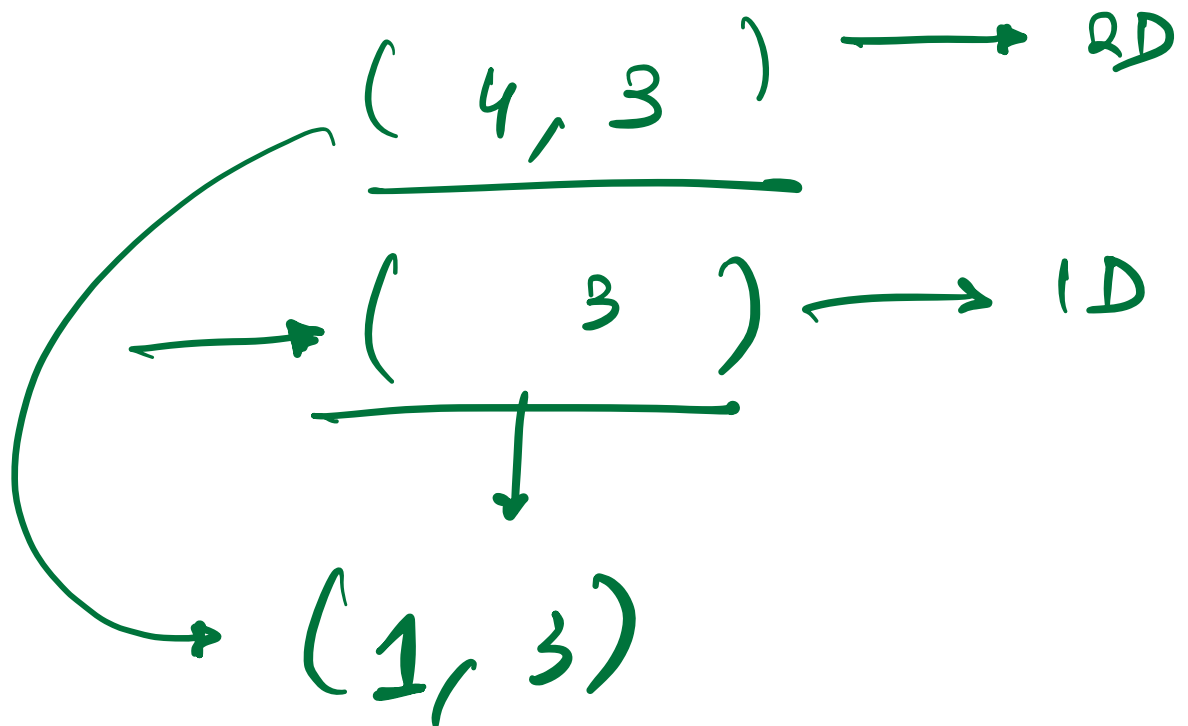
$\text{np.tile}(a, (3, 1))$



$\text{np.tile}(\text{[]}, (2, 1))$



broadcasting

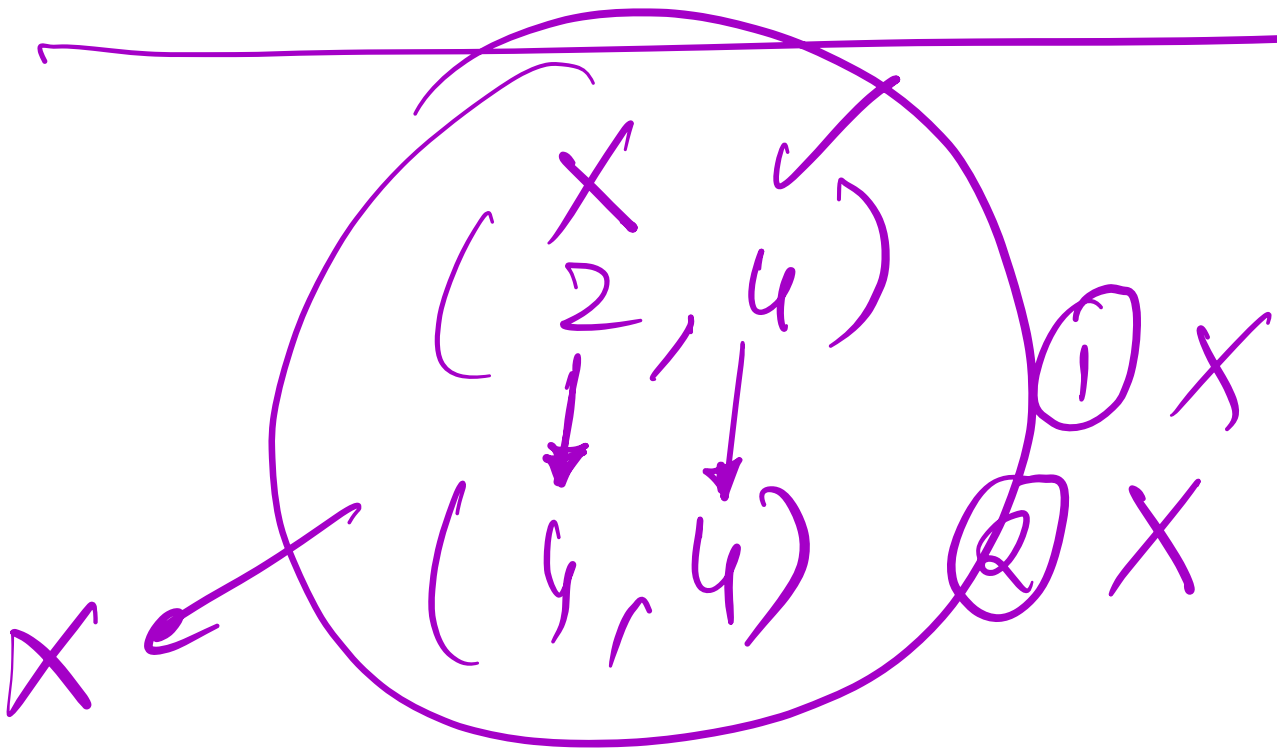
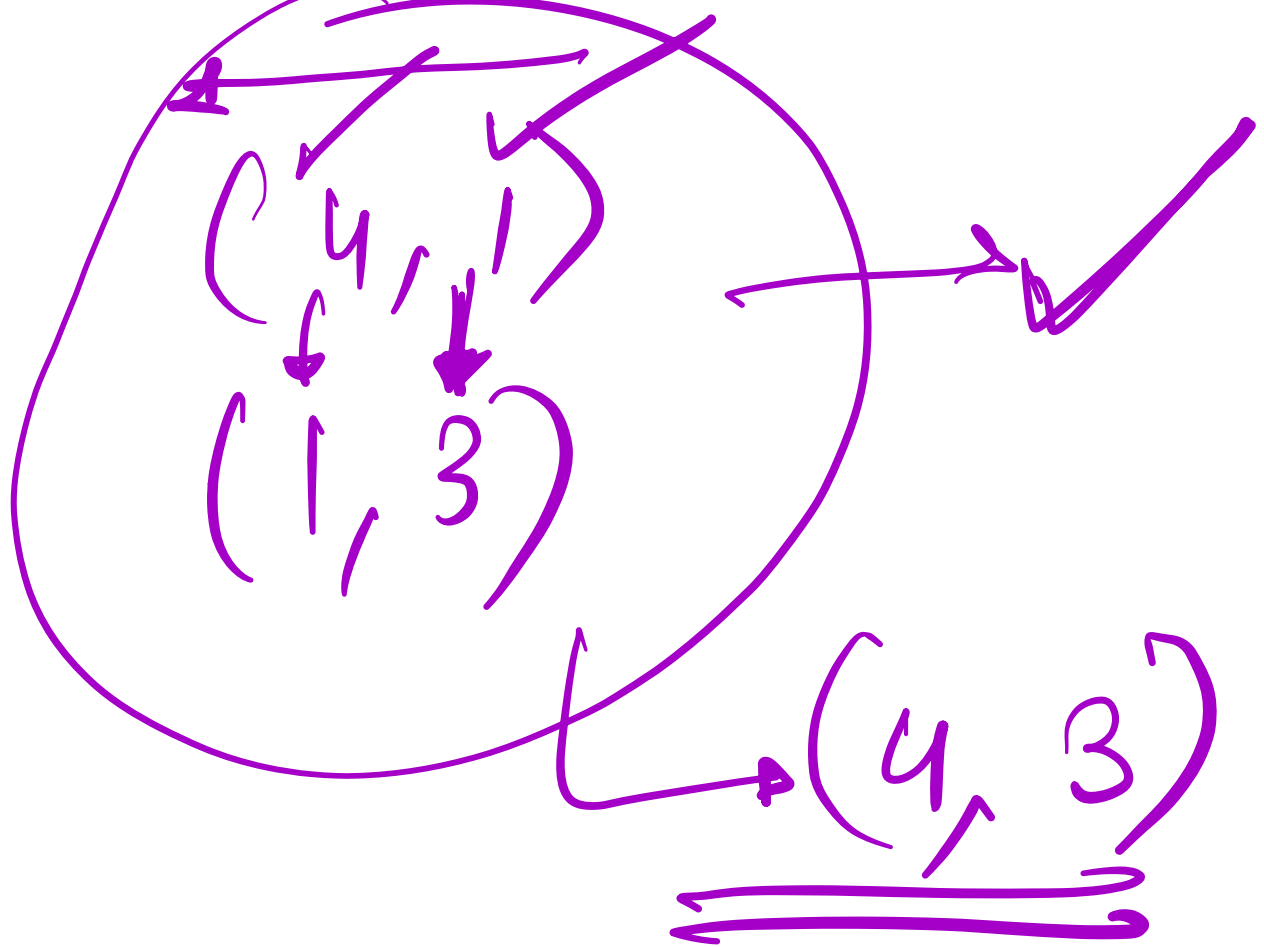


$$a = \begin{bmatrix} [0] \\ [10] \\ [20] \\ [30] \end{bmatrix} \longrightarrow 4 \times 1$$

$$b = [0, 1, 2] \longrightarrow (3,)$$

$$a = (4, 1)$$

$$b = (3,) \Rightarrow \underline{\underline{(1, 3)}}$$



$$\begin{array}{l}
 (3, 4) \rightarrow (3, 4) \\
 (3,) \rightarrow (1, 3)
 \end{array}$$

$$(8, 1, 6, 1)$$

$$\begin{array}{c}
 (7, 1, 5) \\
 \hline
 \begin{array}{c}
 \downarrow \quad \downarrow \quad \downarrow \quad \downarrow \\
 (1, 7, 1, 5) \\
 \downarrow \quad \downarrow \quad \downarrow \quad \downarrow \\
 (8, 1, 6, 1)
 \end{array}
 \end{array}$$

(8, 7, 6, 5)