Matrix product

- Let $A = (a_{i,j}) \in K^{m \times n}$

  $B = (b_{i,j}) \in K^{n \times l}$

- We define A • B = (c_i,j) ∈ K^ n x l

$$c_{i,j} = \sum_{k=1}^{n} a_{i,k} \cdot b_{k,j}$$

- Example:

$$\begin{pmatrix} 1 & 0 & 1 \\ 0 & 1 & 2 \end{pmatrix} \cdot \begin{pmatrix} 1 & 1 \\ 1 & 2 \\ 0 & 1 \end{pmatrix} = \begin{pmatrix} 1 & 2 \\ 1 & 4 \end{pmatrix}$$