



Advent of Mathematical Symbols

Outer product

(Kronecker product for vectors)

$$\begin{pmatrix} V_1 \\ V_2 \end{pmatrix} \otimes \begin{pmatrix} W_1 \\ W_2 \\ W_3 \end{pmatrix} = \begin{pmatrix} V_1 \cdot W_1 & V_1 \cdot W_2 & V_1 \cdot W_3 \\ V_2 \cdot W_1 & V_2 \cdot W_2 & V_2 \cdot W_3 \end{pmatrix}$$

$$\text{matrix entries: } (V \otimes W)_{ij} = V_i W_j$$