

vM1

$$\begin{bmatrix} \text{pink rectangle} \end{bmatrix} \begin{bmatrix} \text{green rectangle} & \text{green rectangle} \end{bmatrix} = \begin{bmatrix} \text{pink rectangle with green cross} & \text{pink rectangle with green cross} \end{bmatrix}$$

$$\mathbf{y}A = [y_1 \quad y_2 \quad y_3] \begin{bmatrix} 1 & 2 \\ 3 & 4 \\ 5 & 6 \end{bmatrix} = [(y_1 + 3y_2 + 5y_3) \quad (2y_1 + 4y_2 + 6y_3)]$$

A row vector \mathbf{y} is multiplied by the two column vectors of A and become the two dot-product elements of $\mathbf{y}A$.

vM2

$$\begin{bmatrix} \text{blue dot} & \text{blue dot} & \text{blue dot} \end{bmatrix} \begin{bmatrix} \text{pink rectangle} \\ \text{pink rectangle} \\ \text{pink rectangle} \end{bmatrix} = \text{blue dot} \begin{bmatrix} \text{pink rectangle} \end{bmatrix} + \text{blue dot} \begin{bmatrix} \text{pink rectangle} \end{bmatrix} + \text{blue dot} \begin{bmatrix} \text{pink rectangle} \end{bmatrix}$$

$$\mathbf{y}A = [y_1 \quad y_2 \quad y_3] \begin{bmatrix} 1 & 2 \\ 3 & 4 \\ 5 & 6 \end{bmatrix} = y_1[1 \quad 2] + y_2[3 \quad 4] + y_3[5 \quad 6]$$

The product $\mathbf{y}A$ is a linear combination of the row vectors of A .