

$$\begin{array}{c}
 \textcolor{blue}{x} \\
 \textcolor{green}{y}
 \end{array}
 \begin{array}{c}
 \\
 \\
 \end{array}
 \begin{bmatrix} \textcolor{blue}{1} & \textcolor{blue}{7} & \textcolor{blue}{2} \end{bmatrix}
 \begin{bmatrix} \textcolor{green}{3} \\ \textcolor{green}{5} \\ \textcolor{green}{2} \end{bmatrix}
 = \textcolor{blue}{1} \cdot \textcolor{green}{3} + \textcolor{blue}{7} \cdot \textcolor{green}{5} + \textcolor{blue}{2} \cdot \textcolor{green}{2}$$

$$= \textcolor{blue}{x}_1 \cdot \textcolor{green}{y}_1 + \textcolor{blue}{x}_2 \cdot \textcolor{green}{y}_2 + \textcolor{blue}{x}_2 \cdot \textcolor{green}{y}_2$$

$$= \sum (\textcolor{blue}{x}_i \cdot \textcolor{green}{y}_i)$$