

$$\vec{v}_1 = \begin{pmatrix} 1 \\ 2 \\ 3 \end{pmatrix} \quad \vec{v}_2 = \begin{pmatrix} 4 \\ 5 \\ 6 \end{pmatrix}$$

$$\vec{v}_1 + \vec{v}_2 = \begin{pmatrix} 5 \\ 7 \\ 9 \end{pmatrix}$$

$$\vec{v}_1 - \vec{v}_2 = \begin{pmatrix} -3 \\ -3 \\ -3 \end{pmatrix}$$

$$\vec{v}_1 \cdot \vec{v}_2 = 32$$

$$\vec{v}_1 \times \vec{v}_2 = \begin{pmatrix} -3 \\ 6 \\ -3 \end{pmatrix}$$

$$M = \begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix} \quad V = \begin{pmatrix} 5 \\ 6 \end{pmatrix}$$

$$MV = \begin{pmatrix} 17 \\ 39 \end{pmatrix}$$