

$$\mathbf{u} = \begin{pmatrix} -1 \\ 2 \\ -4 \\ 3 \end{pmatrix}.$$

$$\hat{u} = \frac{1}{\sqrt{30}} \begin{pmatrix} -1 \\ 2 \\ -4 \\ 3 \end{pmatrix}.$$

a =

$$\begin{pmatrix} 1 \\ 2 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \end{pmatrix}.$$

$$a \bullet b = \begin{pmatrix} 1 \\ 2 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \end{pmatrix} \bullet \begin{pmatrix} 9 \\ 7 \\ 0 \\ 1 \\ 0 \\ 0 \\ 8 \\ 9 \\ 0 \end{pmatrix} = 155.$$

$$\mathbf{u} = \begin{pmatrix} -2 \\ 3 \\ 1 \\ 4 \end{pmatrix}, \quad \mathbf{v} = \begin{pmatrix} 1 \\ 2 \\ 0 \\ -1 \end{pmatrix}.$$

$$P_0 - Q = \begin{pmatrix} x_0 - x_1 \\ y_0 - y_1 \\ z_0 - z_1 \end{pmatrix}, \quad (P_0 - Q) \bullet \mathfrak{n} = a(x_0 - x_1) + b(y_0 - y_1) + c(z_0 - z_1),$$

$$P_0 = \begin{pmatrix} 1 \\ -4 \\ 3 \end{pmatrix}$$

$$m_1 = \begin{pmatrix} 1 \\ 2 \\ -2 \end{pmatrix}$$

and

$$m_1 = \begin{pmatrix} 2 \\ 4 \\ -4 \end{pmatrix},$$