

Multiplication Table

(2)

1	i	j	k
1	i	j	-k
i	-1	k	j
j	-k	-1	-i
k	j	-i	1

$k^2 = +1!$

Kästchenwert Scheitel

$$\begin{pmatrix} u_1^2 - u_2^1 - u_3^2 + u_4^2 \\ 2u_1u_2 - 2u_3u_4 \\ 2u_1u_3 + 2u_2u_4 \\ 0 \end{pmatrix}$$

$$= \begin{pmatrix} u_1 & -u_2 & -u_3 & u_4 \\ u_2 & u_1 & -u_4 & -u_3 \\ u_3 & u_4 & u_1 & u_2 \\ u_4 & -u_3 & u_2 & -u_1 \end{pmatrix} \begin{pmatrix} u_1 \\ u_2 \\ u_3 \\ u_4 \end{pmatrix}$$