$$Q \begin{bmatrix} 2 & 3 \\ 5 & 7 \end{bmatrix} \begin{pmatrix} x_1 \\ x_2 \end{pmatrix} \quad Q \begin{pmatrix} 12 \\ 29 \end{pmatrix}$$

$$Q = \begin{pmatrix} c & -s \\ s & c \end{pmatrix}$$

$$\therefore \frac{1}{\sqrt{29}} \begin{pmatrix} 2 & 5 \\ -5 & 2 \end{pmatrix} \begin{pmatrix} 2 & 3 \\ 5 & 7 \end{pmatrix} = \frac{1}{\sqrt{29}} \begin{pmatrix} 29 & 41 \\ 0 & -1 \end{pmatrix}$$

$$c = \cos\theta$$
$$s = \text{sen}\,\theta$$

$$c = \frac{2}{\sqrt{29}} \quad , \quad s = \frac{-5}{\sqrt{29}}$$

$$\frac{1}{\sqrt{29}} \begin{pmatrix} 2 & 5 \\ -5 & 2 \end{pmatrix} \begin{pmatrix} 12 \\ 29 \end{pmatrix} = \begin{pmatrix} 169 \\ -2 \end{pmatrix} \frac{1}{\sqrt{29}}$$