d) $K = M^{-1} N = M_{-\pi/6} \, M_{\pi/4}$

$= M_{\pi/4 - \pi/6}$ $\qquad \frac{\pi}{4} - \frac{\pi}{6} = \left(\frac{3}{12} - \frac{2}{12}\right)\pi$

$\qquad = \pi/12$

$= M_{\pi/12}$

$$= \begin{bmatrix} \cos \pi/12 & -\mathrm{sen}\, \pi/2 \\ \sin \pi/12 & \cos \pi/12 \end{bmatrix}$$

O jeito mais facil de achar é de multiplicar as matrizes:

$$M_{\pi/12} = M^{-1} N = \begin{bmatrix} \sqrt{3}/2 & 1/2 \\ -1/2 & \sqrt{3}/2 \end{bmatrix} \begin{bmatrix} \sqrt{2}/2 & -\sqrt{2}/2 \\ \sqrt{2}/2 & \sqrt{2}/2 \end{bmatrix}$$

$$= \frac{1}{4} \begin{bmatrix} \sqrt{3} & 1 \\ -1 & \sqrt{3} \end{bmatrix} \begin{bmatrix} \sqrt{2} & -\sqrt{2} \\ \sqrt{2} & \sqrt{2} \end{bmatrix} = \frac{\sqrt{2}}{4} \begin{bmatrix} \sqrt{3} & 1 \\ -1 & \sqrt{3} \end{bmatrix} \begin{bmatrix} 1 & -1 \\ 1 & 1 \end{bmatrix}$$

$$= \frac{\sqrt{2}}{4} \begin{bmatrix} 1+\sqrt{3} & 1-\sqrt{3} \\ -1+\sqrt{3} & 1+\sqrt{3} \end{bmatrix}.$$