$$\begin{pmatrix} \cos\theta_1 & \cos\theta_2 \\ \sin\theta_2 & \sin\theta_2 \end{pmatrix} \begin{pmatrix} v_1 \\ v_2 \end{pmatrix} = \begin{pmatrix} \cos\theta_1' & \cos\theta_2' \\ \sin\theta_2' & \sin\theta_2' \end{pmatrix} \begin{pmatrix} v_1' \\ v_2' \end{pmatrix} \tag{1}$$

$$\begin{pmatrix} v_1' \\ v_2' \end{pmatrix} = \begin{pmatrix} \cos\theta_1' & \cos\theta_2' \\ \sin\theta_2' & \sin\theta_2' \end{pmatrix}^{-1} \begin{pmatrix} \cos\theta_1 & \cos\theta_2 \\ \sin\theta_2 & \sin\theta_2 \end{pmatrix} \begin{pmatrix} v_1 \\ v_2 \end{pmatrix} \tag{2}$$

$$\begin{pmatrix} v_1' \\ v_2' \end{pmatrix} = \frac{1}{\sin(\theta_1' - \theta_2')} \begin{pmatrix} \sin(\theta_1 - \theta_2') & \sin(\theta_2 - \theta_2') \\ -\sin(\theta_1 - \theta_1') & \sin(\theta_2 - \theta_1') \end{pmatrix} \begin{pmatrix} v_1 \\ v_2 \end{pmatrix} \tag{3}$$

$$\begin{pmatrix} v_1' \\ v_2' \end{pmatrix} = \begin{pmatrix} \cos\theta_\delta & -\sin\theta_\delta \\ \sin\theta_\delta & \cos\theta_\delta \end{pmatrix} \begin{pmatrix} v_2 \\ v_1 \end{pmatrix} \tag{4}$$

$$\begin{pmatrix} v_1' \\ v_2' \end{pmatrix} = \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix} \begin{pmatrix} v_1 \\ v_2 \end{pmatrix} = \begin{pmatrix} v_2 \\ v_1 \end{pmatrix} \tag{5}$$

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