from trigonometry import sin, cos

$$
\begin{aligned}
M &= \begin{bmatrix} S\_v_1 & S\_v_2 \\ S\_v_2 & S\_v_3 \end{bmatrix} \begin{bmatrix} cos\left(theta\right) & -sin\left(theta\right) \\ sin\left(theta\right) & cos\left(theta\right) \end{bmatrix} \\
v &= \begin{bmatrix} \left(M_{1,1}, M_{2,1}\right)^T \; TP & \left(M_{1,2}, M_{2,2}\right)^T \; TP \end{bmatrix}
\end{aligned}
$$

where

$$
\begin{aligned}
S\_v &\in \mathbb{R}^3 \\
theta &\in \mathbb{R} \\
TP &\in \mathbb{R}^{2 \times 3}
\end{aligned}
$$