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(3/1/18)

ENG ME/SE 740:

Exercises (Set 3) (Due 3/13/18)

1. Find θ, ω and v such that

$$\mathrm{Exp}\left[\begin{pmatrix} \hat{\omega} & v \\ 0 & 0 \end{pmatrix}\theta\right] = \begin{pmatrix} \frac{1+\sqrt{2}}{3} & \frac{2-\sqrt{2}\left(1+\sqrt{3}\right)}{6} & \frac{2+\sqrt{2}\left(-1+\sqrt{3}\right)}{6} & \frac{\sqrt{2}}{3}+\frac{\pi}{12} \\ \frac{2+\sqrt{2}\left(-1+\sqrt{3}\right)}{6} & \frac{1+\sqrt{2}}{3} & \frac{2-\sqrt{2}\left(1+\sqrt{3}\right)}{6} & \frac{-1}{3\sqrt{2}}+\frac{1}{\sqrt{3}}-\frac{1}{\sqrt{6}}+\frac{\pi}{12} \\ \frac{2-\sqrt{2}\left(1+\sqrt{3}\right)}{6} & \frac{2+\sqrt{2}\left(-1+\sqrt{3}\right)}{6} & \frac{1+\sqrt{2}}{3} & \frac{-1}{3\sqrt{2}}-\frac{1}{\sqrt{3}}+\frac{1}{\sqrt{6}}+\frac{\pi}{12} \\ 0 & 0 & 0 & 1 \end{pmatrix}$$