Helpful? hints for 25.13

• Stare, transfixed, at [CO pg 969].
• Then actually read it.

• Note that unit vectors $\hat{i}, \hat{j}$ and $\hat{k} = \hat{e}_z$ are constant in time.

• But unit vectors $\hat{e}_R, \hat{e}_\phi$ are not constant in time.

\[
\begin{align*}
\dot{\hat{e}}_\phi &= -\hat{e}_R \dot{\phi} \\
\hat{e}_R &= \hat{i} \cos \phi + \hat{j} \sin \phi \\
\hat{e}_\phi &= -\hat{i} \sin \phi + \hat{j} \cos \phi
\end{align*}
\]