RBE 500 Homework #4

Arjan Gupta

Problem 4.6

Given $R = R_{x,\theta}R_{y,\phi}$, compute $\frac{\partial R}{\partial \phi}$. Evaluate $\frac{\partial R}{\partial \phi}$ at $\theta = \frac{\pi}{2}$, $\phi = \frac{\pi}{2}$.

Solution

$$\frac{\partial}{\partial R_{x,\theta}R_{y,\phi}}(\phi) = R_{x,\theta}\frac{\partial}{\partial R_{y,\phi}}(\phi) = R_{x,\theta}\frac{\partial}{\partial \phi}(\begin{bmatrix}0 & 0 & 0\\ 0 & 0 & 0\\ 0 & 0 & 0\end{bmatrix})$$