1. Find an explicit formula for the Truesdell derivative, that is find an explicit formula for the derivative

$$\overset{\circ}{\mathbb{A}}(\boldsymbol{x},t) =_{\text{def}} \frac{\mathrm{d}}{\mathrm{d}\tau}\left(\mathbb{F}_t(\boldsymbol{x},\tau)^{-1}\,\mathbb{A}(\boldsymbol{\chi}_t(\boldsymbol{x},\tau),\tau)\,(\det\mathbb{F}_t(\boldsymbol{x},\tau))\,\mathbb{F}_t(\boldsymbol{x},\tau)^{-\mathsf{T}}\right)\Big|_{\tau=t},$$

where $\mathbb{F}_t(\boldsymbol{x},\tau)$ denotes the relative deformation gradient and $\boldsymbol{\chi}_t(\boldsymbol{x},\tau)$ denotes the relative deformation.