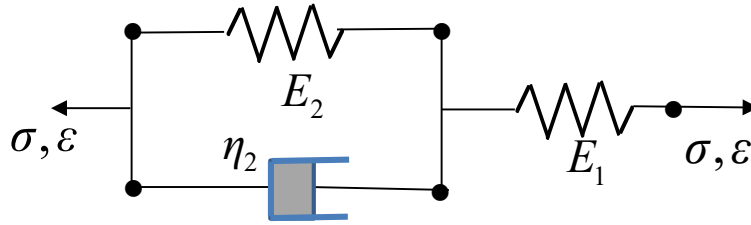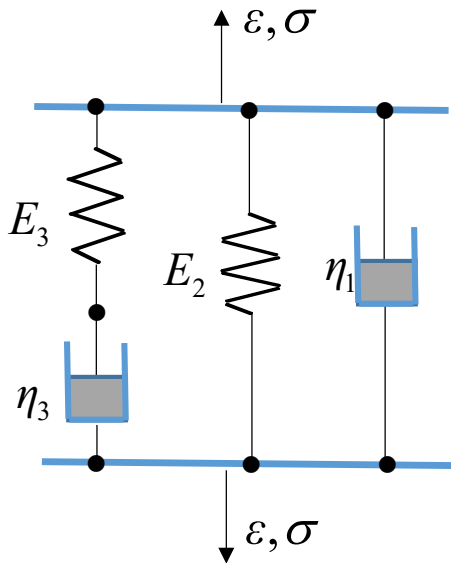**Exercise 1**: Derive the constitutive equation for the configuration below,

Exercise 2: Verify that[1],

$$\eta_1\eta_3\ddot{\varepsilon} + (\eta_3 E_3 + E_2\eta_3 + \eta_1 E_3)\dot{\varepsilon} + E_2 E_3\varepsilon = \eta_3\dot{\sigma} + E_3\sigma$$

is the constitutive, or rheological, equation for the configuration shown in the figure below,

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[1]Note that the dots on the strain and stresses indicate derivatives with respect to time.