A spherical rubber balloon has an initial wall thickness 0.5 mm and diamter 100 mm. It is inflated to a final diameter of 500 mm. Assume that the rubber may be modelled as a neo-Hookean material with a shear modulus of $\mu = 1.0\,\text{MPa}$.

1. Calculate the final wall thickness.
2. Plot a curve of the inflation pressure versus the circumferential stretch curve.
3. Calculate the maximum pressure required to inflate the balloon.
4. Calculate the pressure when the balloon has a final diameter of 500 mm.