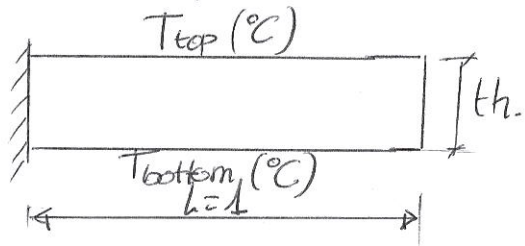


Thermal gradient on shell elements



α = coefficient of thermal expansion

$$\Theta \cdot R = 1 \Rightarrow R = \frac{1}{\Theta}$$

$$\Theta \left(R + \frac{t_h}{2} \right) = 1 + \alpha (T_{top} - T_{bottom})$$

$$\Theta = \frac{\alpha (T_{top} - T_{bottom})}{t_h}$$

