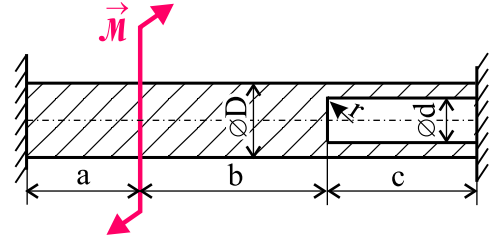


### Problem 502

Determine the maximum value of the couple  $\mathcal{M}_{\max}$  which the shaft (in the figure) can be acted upon by, if the safety factor against the limit state of elasticity should be at least 2. Shear yield stress value is  $\tau_K = \sigma_K/2$ .

Input values:

$$\begin{aligned} a &= 0,3 \text{ m}, & \varnothing D &= 40 \text{ mm}, & E &= 2 \cdot 10^5 \text{ MPa}, \\ b &= 0,5 \text{ m}, & \varnothing d &= 32 \text{ mm}, & \sigma_K &= 320 \text{ MPa}, \\ c &= 0,4 \text{ m}, & r &= 2 \text{ mm}, & \mu &= 0,3. \end{aligned}$$



torsion