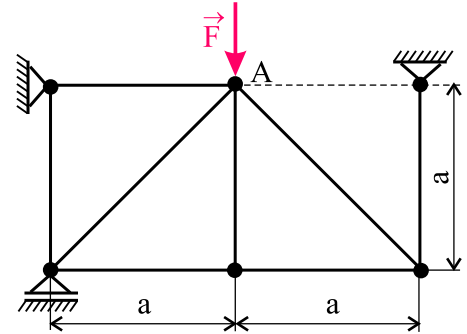


Problem 428

Determine the maximum force \vec{F} that the strut frame in the figure can be loaded upon by, so that the safety factor against the limit state of elasticity is not lower than 2. All the bars are homogeneous, made of the same material and of the same circular cross section with the diameter ϕd .

Input values:

$$a = 1 \text{ m}, \quad \phi d = 30 \text{ mm}, \\ E = 2 \cdot 10^5 \text{ MPa}, \quad \sigma_K = 350 \text{ MPa}.$$



tension systems with bars