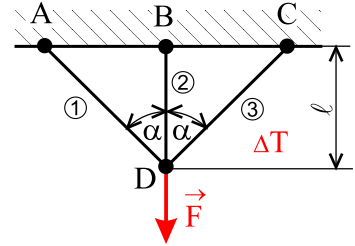


Problem 430

The structure in the figure is made of bars of the same circular cross sections S and loaded by the force \vec{F} . The bars No. 1 and 3 are made of copper (Young's modulus E_c , yield stress σ_{Kc} and coefficient of thermal elongation α_c), the bar No. 2 is made of steel (Young's modulus E_s , yield stress σ_{Ks} and coefficient of thermal elongation α_s), and their temperature increase will be ΔT in operation. Evaluate the safety factor against the limit state of elasticity. Gravitational forces and production inaccuracies can be neglected.



Solutions tension systems with bars