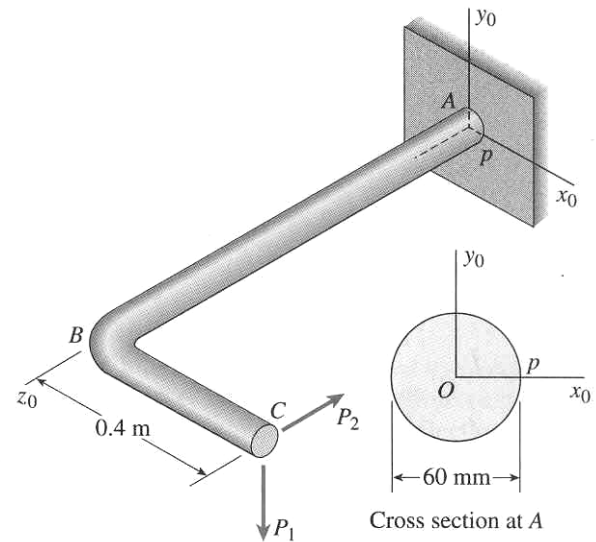


A horizontal bracket ABC consists of two perpendicular arms AB and BC, the latter having a length of 0.4 m. Arm AB has a solid circular cross section with diameter equal to 60 mm. At point C a load  $P_1=2.02\text{kN}$  acts vertically and a load  $P_2=3.07\text{kN}$  acts horizontally and parallel to arm AB. Considering only the force  $P_1$  and  $P_2$ , calculate the maximum tensile stress  $\sigma_T$  and compressive stress  $\sigma_C$ , and the maximum in-plane shear stress  $\tau_{\max}$  at point p, which is located at support A on the side of the bracket at midheight.



“Mechanics of Materials,” Gere & Timoshenko, 4<sup>th</sup> ed.