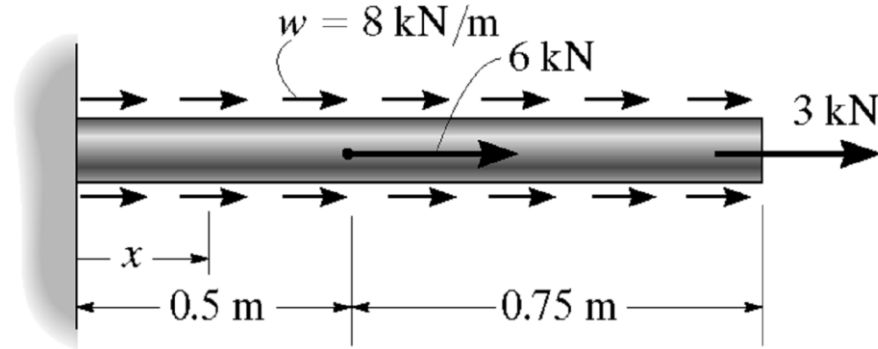
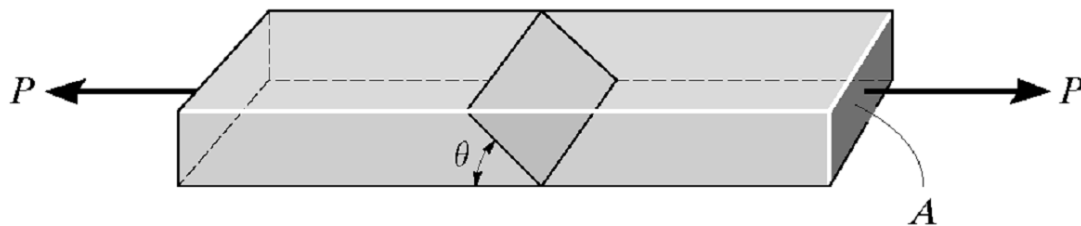


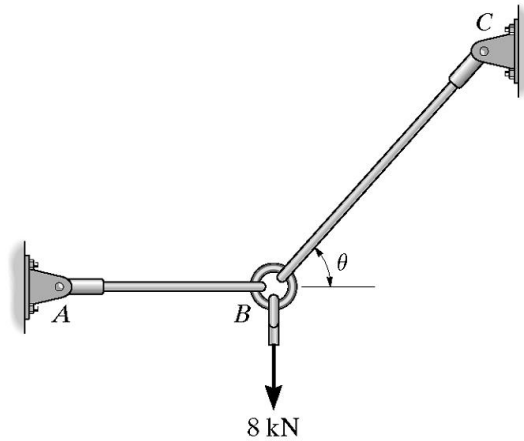
1. The bar has a cross-sectional area of  $400 \text{ mm}^2$ . If it is subjected to a uniform axial distributed loading along its length and to two concentrated loads as shown, determine the average normal stress in the bar as a function of  $x$ . 【图示等直杆横截面面积为  $400 \text{ mm}^2$ ，受到沿轴线方向的均布荷载和两个集中荷载共同作用，试求杆内平均正应力随轴向坐标  $x$  的变化函数关系。】



2. The bar has a cross-sectional area  $A$  and is subjected to the axial load  $P$ . Determine the average normal and average shear stresses acting over the shaded section, which is oriented at  $\theta$  from the horizontal. Plot the variation of these stresses as a function of  $\theta$  ( $0 \leq \theta \leq 90^\circ$ ). 【图示等直杆横截面面积为  $A$ ，两端受轴力  $P$  作用，试求与水平面夹角为  $\theta$  的阴影截面上的平均正应力和平均切应力，并作图表示这两个应力随截面方位角  $\theta$  的变化函数关系。】



3. Rods  $AB$  and  $BC$  have diameters of 4 mm and 6 mm, respectively. If the vertical load of 8 kN is applied to the ring at  $B$ , determine the angle  $\theta$  of rod  $BC$  so that the average normal stress in each rod is equivalent. What is this stress? 【图示两等直杆  $AB$  和  $BC$  的直径分别为 4 mm 和 6 mm，并由连接环  $B$  连接，且在环上作用有 8 kN 的竖直荷载，若要使得两杆内的平均正应力相等，试求  $BC$  杆的方位角  $\theta$  和两杆内的等应力。】



4. The two-member frame is subjected to the distributed loading shown. Determine the average normal stress and average shear stress acting at sections  $a-a$  and  $b-b$ . Member  $CB$  has a square cross section of 35 mm on each side. Take  $w = 8$  kN/m. 【图示两杆结构受到  $w = 8$  kN/m 的均布荷载作用，已知等直杆  $CB$  的截面为边长 35 mm 的正方形，试求截面  $a-a$  和  $b-b$  上所受平均正应力和平均切应力。】

