ES120 Spring 2018 – Section 8 Notes

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Problem 1:

The vertical shear is 25 kN in a beam having the cross section shown. Knowing that $d = 50$ mm, determine the shearing stress at (a) point a, (b) point b.

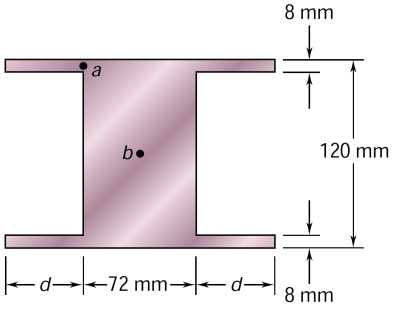

Figure 1

Problem 2:

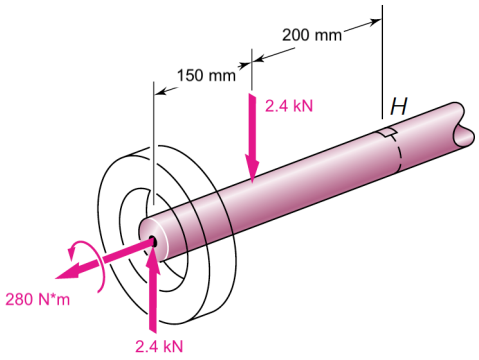

Figure 2

The axle of an automobile is acted upon by the forces and couple shown. Knowing that the diameter of the solid axle is 1.25 in., determine (a) the principal planes and principal stresses at point H located on top of the axle, (b) the maximum shearing stress at the same point.

Problem 3:

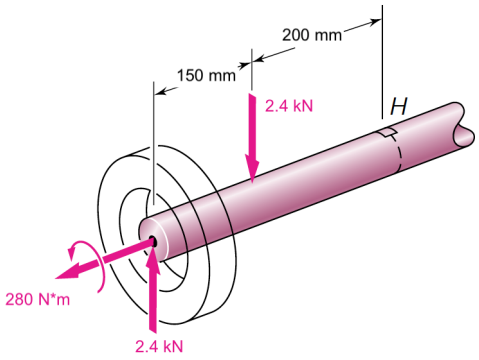

Figure 3

Solve the previous problem using Mohr's circle