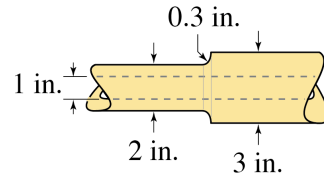


Homework for Sections 3.6-3.12

1) Problem 3.56 in text.

2) Problem 3.58 in text.

3) The circular cross section shaft has a 1 in. diameter hole, and is constructed of aluminum alloy 2014-T6 with the properties given in Appendix B on page 746 of your text. If the aluminum is elastic-perfectly plastic, determine the torque that will cause collapse of the shaft.



Answer: $T_{collapse} = \frac{2\pi}{3} \tau_Y (r_o^3 - r_i^3) = 8640 \text{ in} \cdot \text{lb}$

You should be able to derive this.