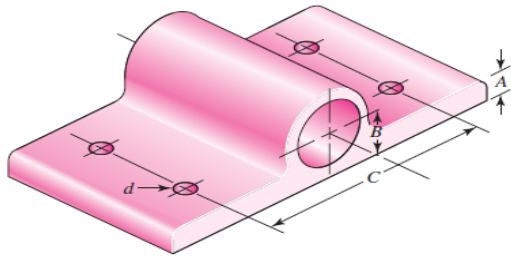


Quiz 1

Student Name:

NO. :

The figure shows a cast-iron bearing block that is to be bolted to a steel ceiling joist and is to support a gravity load. Bolts used are M20 ISO 8.8 with coarse threads and with 3.4-mm-thick steel washers under the bolt head and nut. The joist flanges are 20 mm in thickness, and the dimension A , shown in the figure, is 20 mm. The modulus of elasticity of the bearing block is 135 GPa.



- (a) Find the wrench torque required if the fasteners are lubricated during assembly and the joint is to be permanent.
- (b) Determine the load factor for the design if the gravity load is 15 kN.