College of Engineering & Technology
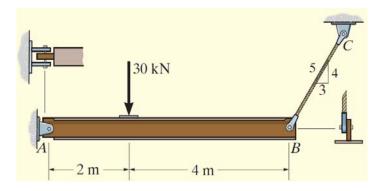
Department: Mechanical Engineering   Marks: 15
Lecturer: Dr. Rola Afify   Time: 1.15 - 2.00
Course Code: ME276   Date: 5/11/2014

Name: R.N.:

Answer the following questions:
Question one (5 marks)

Calculate the force needed to shear a pin 6 mm diameter given that the ultimate shear stress is 70 MPa.

Question two (10 marks)

The two members, shown in the figure, are pinned together at *B*. If the pins have an allowable shear stress of τ_{allow} = 90 MPa, and allowable tensile stress of rod *CB* is (σ_t)allow = 115 MPa. Determine to nearest mm the smallest diameter of pins *A* and *B*.

Dr. Rola Afify