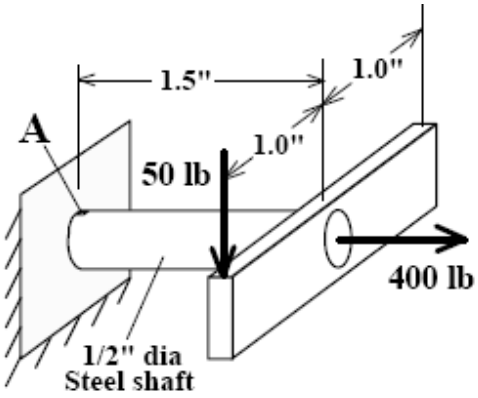
The Hashemite University
DEPARTMENT OF MECHANICAL ENGINEERING
Machine Elements Design

1st Exam **Part One (Closed Book)** **28-10-2010**

Student Name: **Student No.:**

Problem II [7.5 Points]
Determine the state of principal stresses stress at point **A** and show the stresses on a stress element. Neglect the direct shear effect.



Problem III [7.5 Points]
A hanger has dimensions in inches as shown as shown. It was made from a 0.750 inch wide strip of 1030 normalized steel with maximum does not exceed 50 ksi, which was bent to the shape shown. (i.e. the depth into the paper is 0.750 inch.) Determine the maximum allowable steady force **F** that may be placed on each side of the hanger.