

NAMES: _____

- ✓ Work in groups of 2-3 people.
- ✓ Put names in alphabetical order.
- ✓ Work in pencil.
- ✓ Points will be deducted for sloppy work.
- ✓ Work must be turned in at the end of the period.

For the component shown in the figure below (assume the bar is solid, round 1 in diameter 1040 steel, P is 200 lb, a and b are both 12 inches):

- (5pts) draw a free body diagram for the piece between section 1 and section 2
- (1pt) calculate reaction forces at section 1 and internal forces at section 2
- (1pt) draw shear and moment diagrams for the piece between section 1 and section 2
- (1pt) calculate the maximum bending moment in the bar and identify its location
- (1pt) calculate the maximum shear stress in the bar and identify its location
- (1pt) calculate the stresses and draw the state of stress for the top of the bar at section 1

