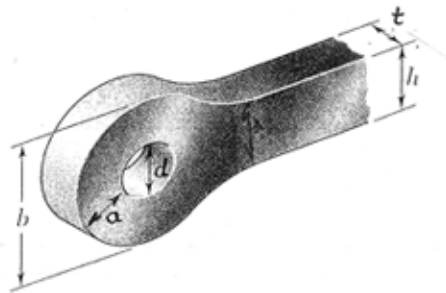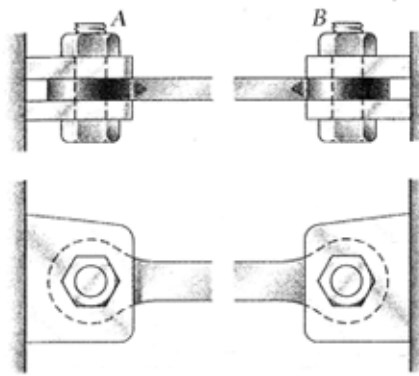Quiz # 1

ESM2204 Spring 2011

Instructor: R.D. Kriz

A steel tie rod shown is designed to carry either a tension or compressive force of magnitude, P, between pins at points A and B. Using the dimensions shown in figures below determine the expressions for the bearing stress and the **maximum** normal stress in tension and compression, where ½(b-d) < t h .

Choices of expressions for different stress types: ✓, correct ; ✗, error

1) Bearing: P/(t d), ✓ Tension: P/(t h), ✗ Compression: P/(t h) ✓

2) Bearing: P/(t πd/2), ✗ Tension: P/[t (b-d)], ✓ Compression: P/[t (b-d)], ✗

3) Bearing: P/(t d), ✓ Tension: P/(t 2a), ✓ Compression: P/(t h), ✓ ◄— All Three ✓✓✓ Correct

4) Bearing: P/(t πd/2), ✗ Tension: P/(t h), ✗ Compression: P/[t (b-d)], ✗