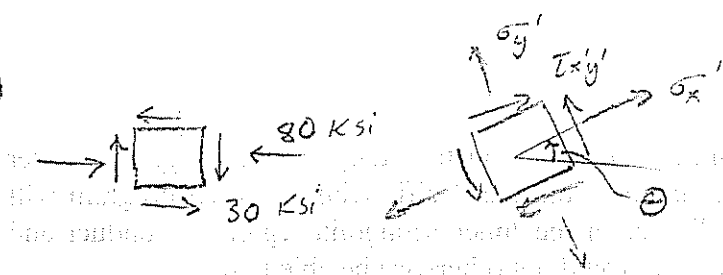
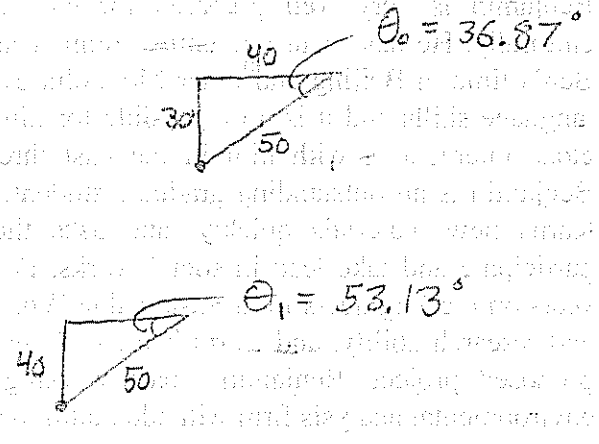
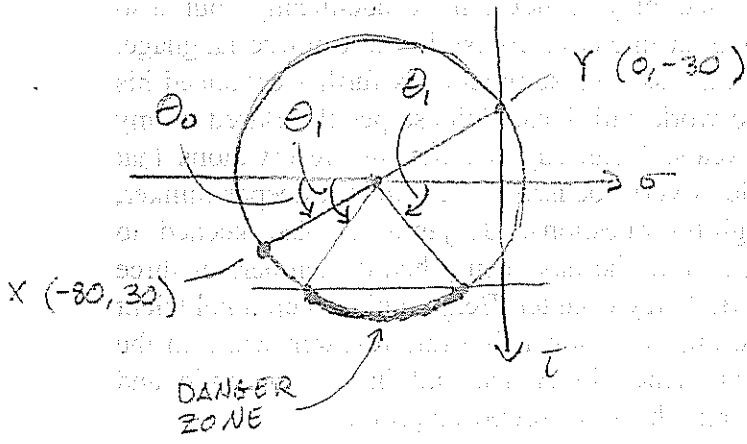


7.60



Find range of θ such that $\tau_{x'y'} < 40$ ksi



Thus, rotation on Mohr's Circle must NOT be between $\theta_1 - \theta_0$ and $180^\circ - \theta_1 - \theta_0$
 (16.26°) (90°)

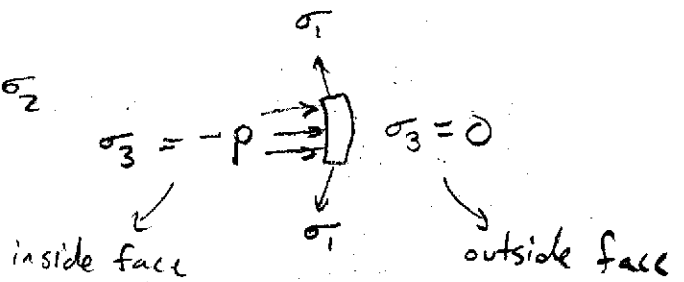
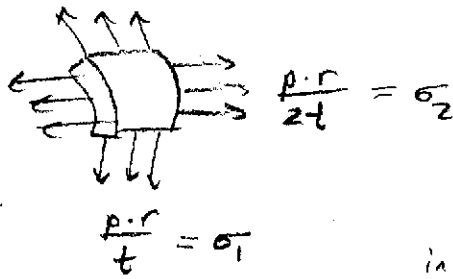
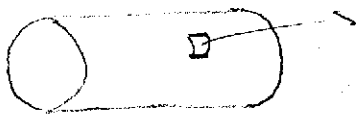
You can add 360° to each of these, and you describe the same thing.
 Rotation must NOT be between $360^\circ + \theta_1 - \theta_0$ and $540^\circ - \theta_1 - \theta_0$
 (376.26°) (450°)

Thus we can't rotate from 16.26° to 90° or 376.26° to 450° on Mohr's Circle.

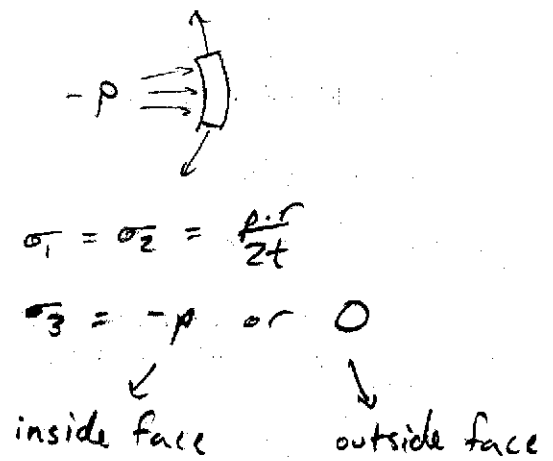
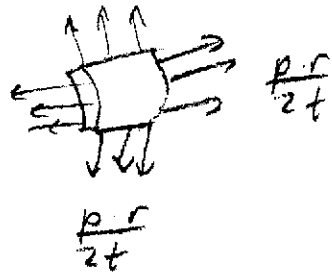
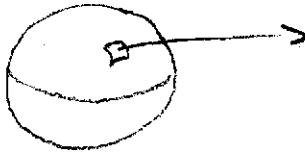
This corresponds to element rotations of $1/2$ times the above, meaning 8.13° to 45° or 188.13° to 225°

The final, allowable values of θ (for the element) are thus 0 to 8.13° , 45° to 188.13° , 225° to 360°

Cylinder

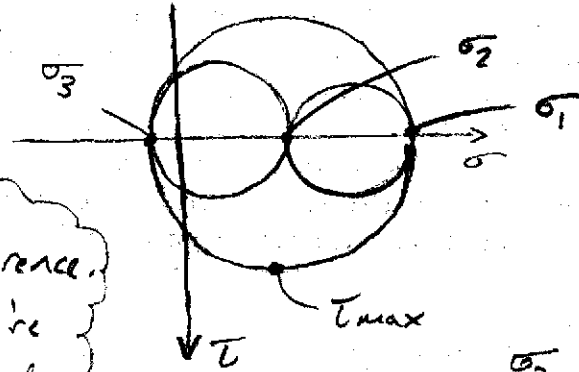


Sphere

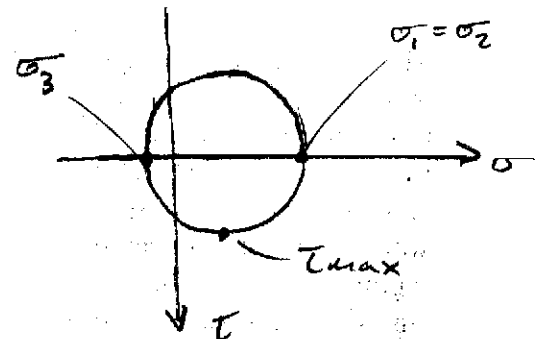


$$\tau_{max} = \frac{\sigma_1 - \sigma_3}{2}$$

Cylinder



Sphere



$$\sigma_3 = 0 \text{ or } -p$$

Doesn't make much difference.
Depends on whether you're
looking at inside or outside
face