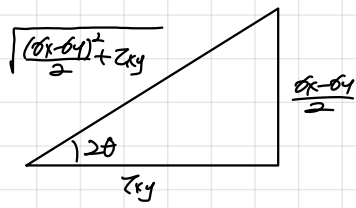


공식: $\frac{1}{2} \tan^{-1} \left(\frac{2\tau_{xy}}{\sigma_x - \sigma_y} \right)$



문제 6. x 축과 최대 주응력 방향 사이의 각도 θ (deg.), $(-90 \leq \theta \leq 90)$

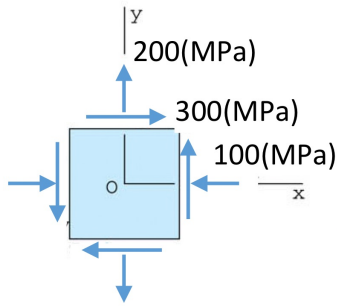


그림 1

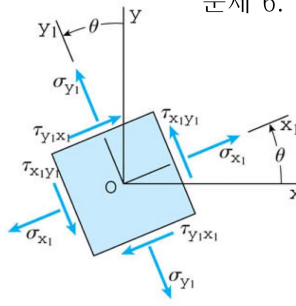


그림 2

$$-90 \leq \theta \leq 90^\circ$$

Sol) $\sigma_x = 300 \text{ MPa}$
 $\sigma_y = 200 \text{ MPa}$
 $\tau_{xy} = 100 \text{ MPa}$

$$\frac{1}{2} \tan^{-1} \left(\frac{2\tau_{xy}}{\sigma_x - \sigma_y} \right) = \frac{1}{2} \tan^{-1} \left(\frac{200}{300 - 200} \right) = 58.71^\circ$$

// 내기 한 값

정답: 58.28°