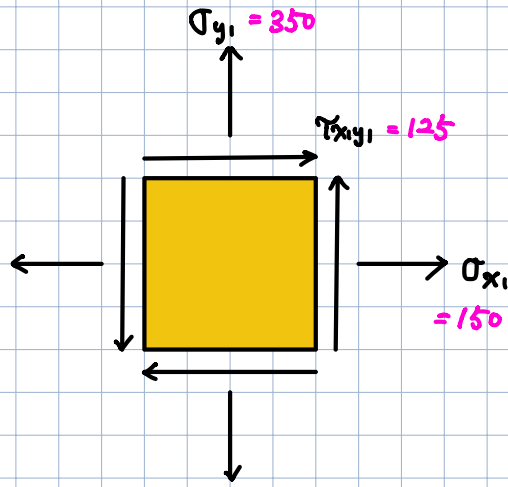
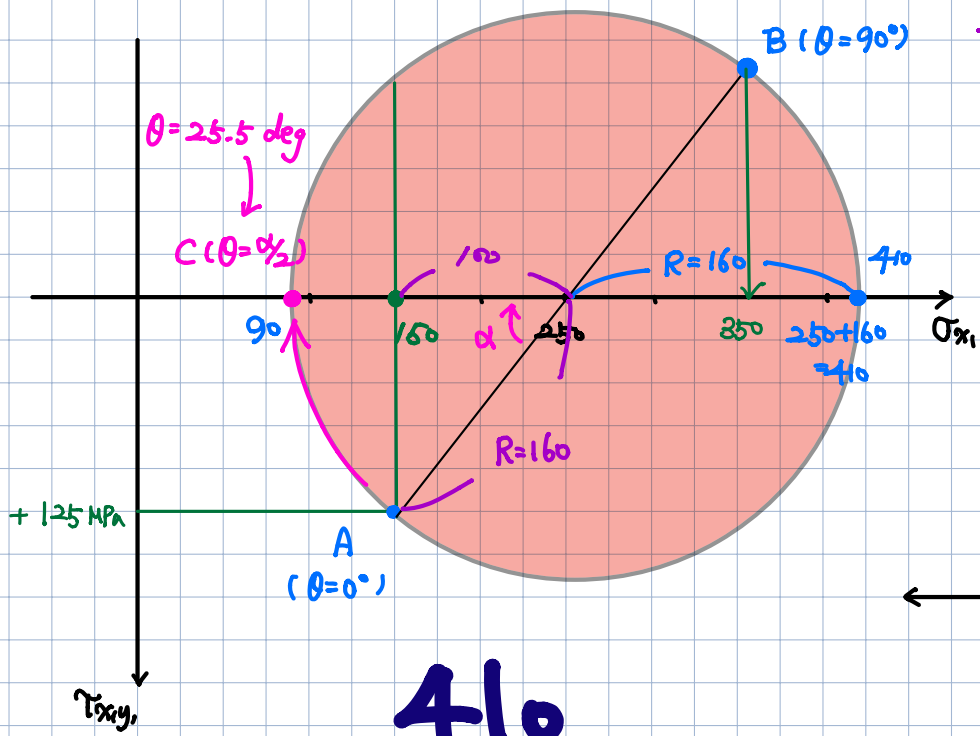


$$\begin{cases} \sigma_{x_1} = 150 \\ \sigma_{y_1} = 350 \\ \tau_{x_1 y_1} = 125 \end{cases}$$



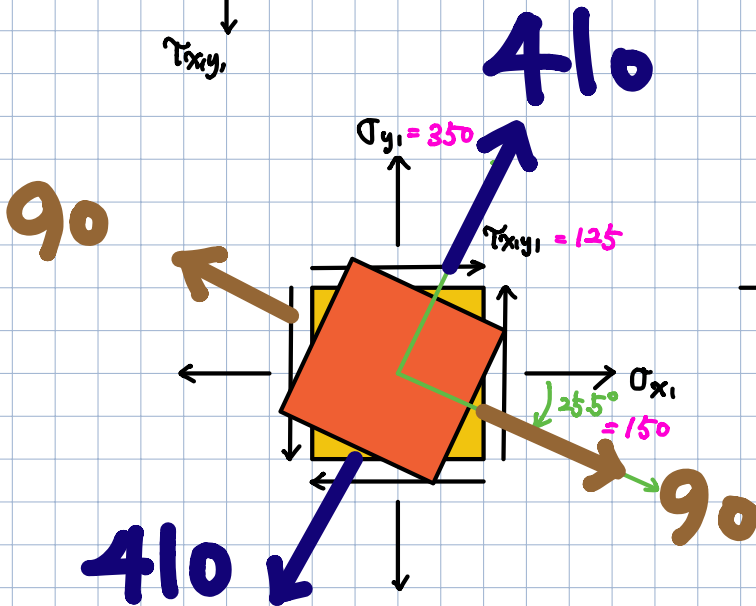
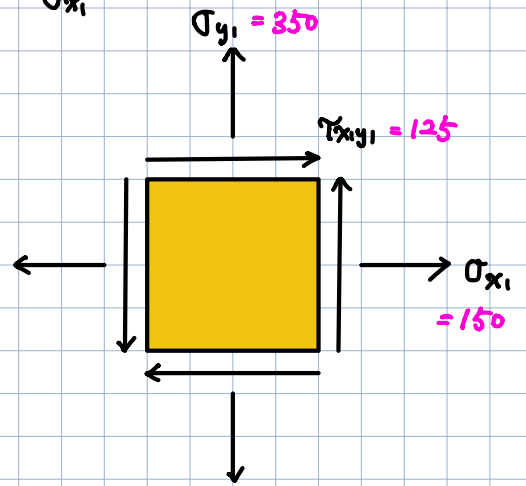
$$C = \frac{\sigma_{x_1} + \sigma_{y_1}}{2} = \frac{150 + 350}{2} = 250$$

$$R = \sqrt{\left(\frac{\sigma_{x_1} - \sigma_{y_1}}{2}\right)^2 + \tau_{x_1 y_1}^2} = \sqrt{\left(\frac{150 - 350}{2}\right)^2 + 125^2} = 160$$

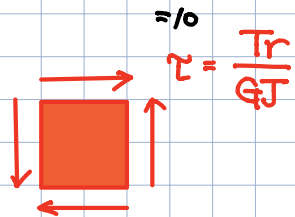
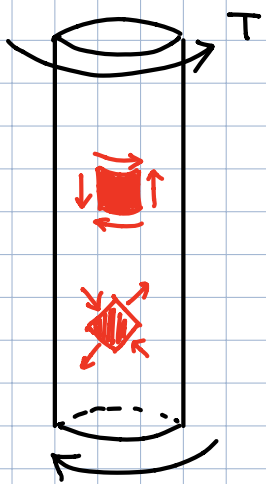


$$\therefore \cos \alpha = \frac{150}{160}$$

$$\therefore \alpha = \cos^{-1}\left(\frac{150}{160}\right) = 51.32 \text{ deg}$$



$\theta_p = 25.5 \text{ deg or } 115.5 \text{ deg.}$
Ans.



$C = 0$
 $R = r$

