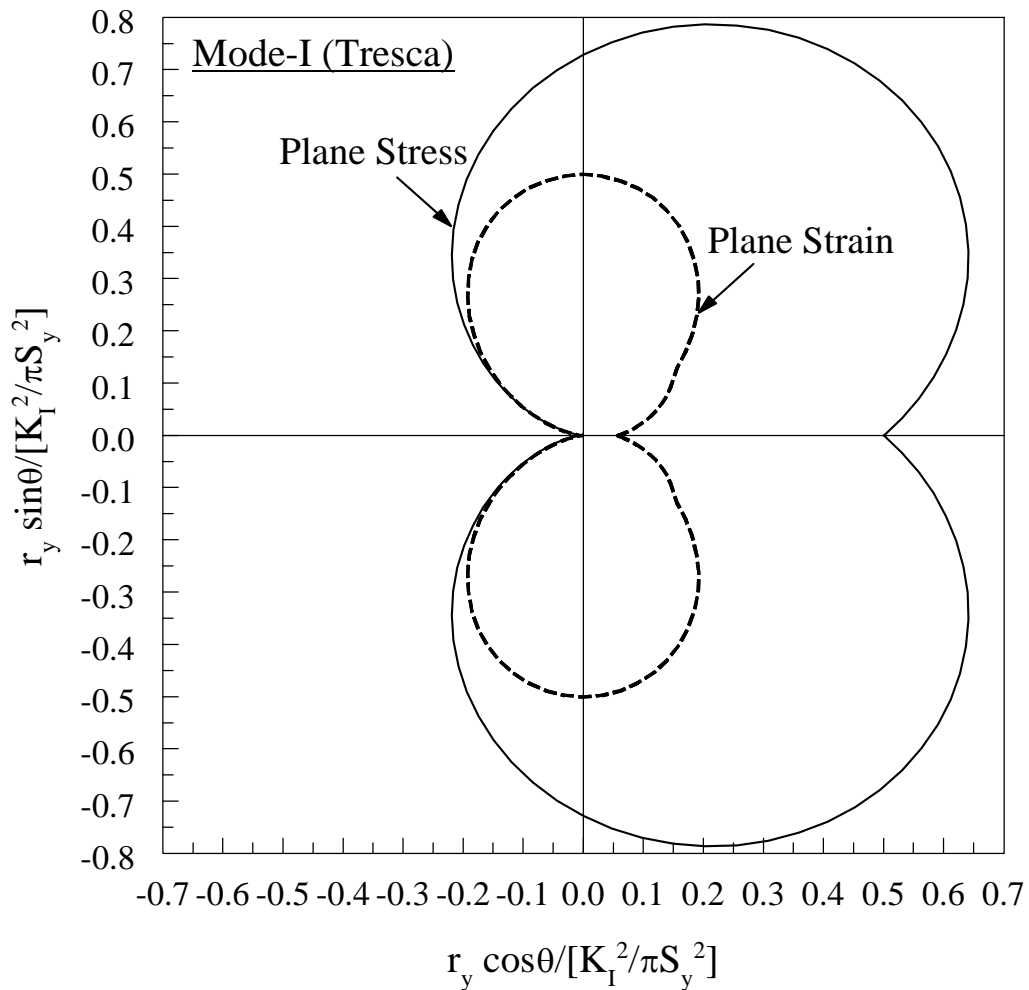


**(b) Sketches of Plastic Zone Size (Mode-I; Tresca)**



**Comments:** Plastic zone from Tresca yield criterion in plane stress is also significantly smaller than that in plane strain.

Compared with Problem 1, the Tresca criterion gives more conservative prediction of the plastic zone size than the von Mises criterion, except when  $\theta = 0, \pi,$  and  $2\pi$ . This is because the Tresca criterion over-emphasizes yielding, i.e., it predicts yielding at a lower magnitude of stress field when compared with the von Mises criterion.