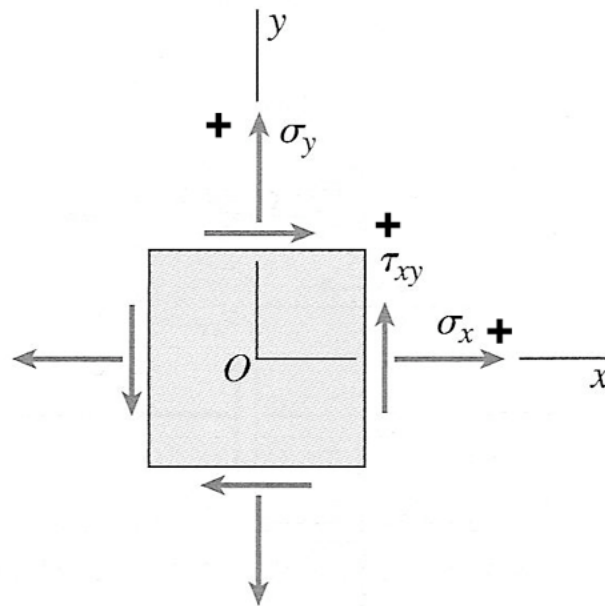# Quiz 8

1. and 2. An element in *plane stress* is subjected to stresses σ_x, σ_y, and τ_{xy} (see figure).

Using Mohr's circle, determine (a) the principal stresses and (b) the maximum shear stresses and associated normal stresses. Show all results on sketches of properly oriented elements.

1 $\sigma_x = -31.5$ MPa, $\quad \sigma_y = 31.5$ MPa, $\quad\quad \tau_{xy} = 30$ MPa

2 $\sigma_x = -12{,}300$ psi, $\quad \sigma_y = -19{,}500$ psi, $\quad \tau_{xy} = -7700$ psi