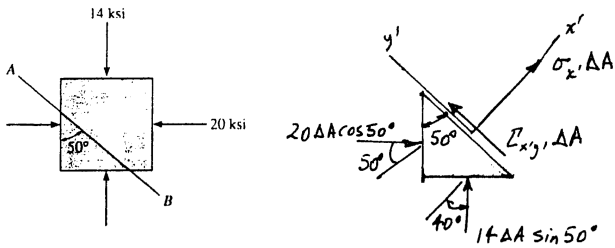


**\*9-104** The state of stress at a point in a member is shown on the element. Determine the stress components acting on the inclined plane *AB*. Solve the problem using the method of equilibrium described in Sec. 9.1.



$$+\Sigma F_x = 0; \quad \sigma_{x'} \Delta A + 14 \Delta A \sin 50^\circ \cos 40^\circ + 20 \Delta A \cos 50^\circ \cos 50^\circ = 0$$

$$\sigma_{x'} = -16.5 \text{ ksi} \quad \text{Ans}$$

$$+\Sigma F_y = 0; \quad \tau_{x'y'} \Delta A + 14 \Delta A \sin 50^\circ \sin 40^\circ - 20 \Delta A \cos 50^\circ \sin 50^\circ = 0$$

$$\tau_{x'y'} = 2.95 \text{ ksi} \quad \text{Ans}$$

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