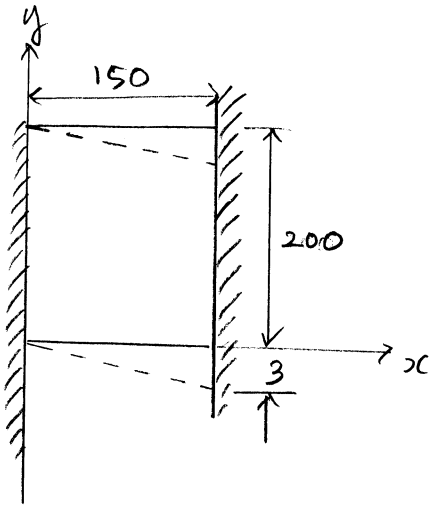
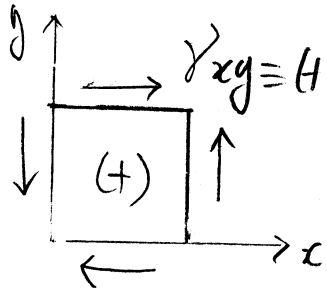
HW #3 Due: 9/19/2000

2-13

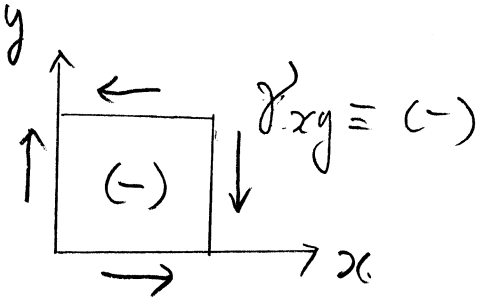


<Sign Convention>

$\gamma_{xy} \equiv (+)$ when $\begin{cases} x \equiv (+) \\ y \equiv (+) \end{cases}$ or $\begin{cases} x \equiv (-) \\ y \equiv (-) \end{cases}$

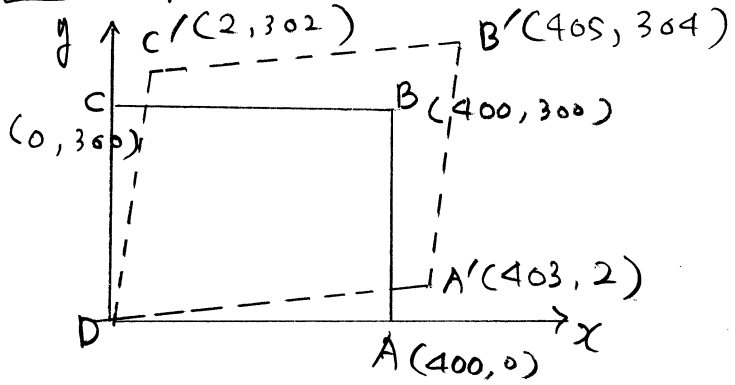


$$\theta = \tan^{-1}\left(\frac{3}{150}\right) = 0.02 \text{ (rad)}$$



$$\gamma_{xy} = -0.02 \text{ (rad)}$$

2-19



$$\varepsilon_{BD} \equiv \frac{\overline{B'D} - \overline{BD}}{\overline{BD}}$$

$$\overline{BD} = \sqrt{400^2 + 300^2} = 500 = \overline{AC}$$

$$\overline{B'D} = \sqrt{405^2 + 304^2} = 506.4$$

$$\varepsilon_{BD} = \frac{506.4 - 500}{500} = 12.8 \times 10^{-3}$$

$$\varepsilon_{AC} \equiv \frac{\overline{A'C'} - \overline{AC}}{\overline{AC}}$$

$$\overline{A'C'} = \sqrt{(403-2)^2 + (302-2)^2}$$

$$= 500.8$$

$$\varepsilon_{AC} = \frac{500.8 - 500}{500} = 1.6 \times 10^{-3}$$