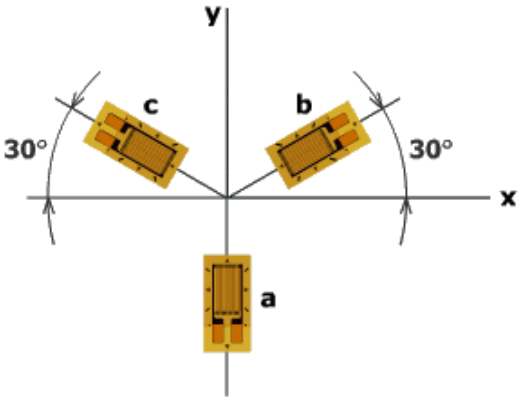
IDE 110 – Summer 2006 Quiz 16 **Name:** _____

For the following strain gage measurements, determine stresses σ_x, σ_y and τ_{xy}. Assume E = 200 GPa and $\nu = 0.32$.

$\varepsilon_a = -500\ \mu$
$\varepsilon_b = 900\ \mu$
$\varepsilon_c = 400\ \mu$



Show steps clearly. Include units and box the final answer.

Answers:

$\varepsilon_x = 1033\mu$
$\varepsilon_y = -500\mu$
$\gamma_{xy} = 577\mu$

$\sigma_x = 194.5$ MPa
$\sigma_y = -37.8$ MPa
$\tau_{xy} = 43.7$ MPa