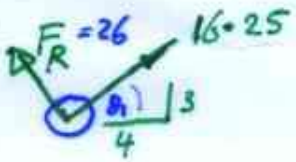
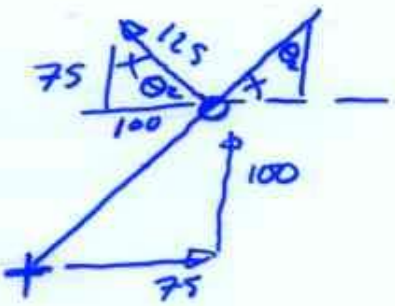
$F = 16.25\,kN$. $F_R = 26\,kN$

look @ top left rivet 1st





Sum x components

$16.25(\cos\theta_1) - 26(\cos\theta_2)$

$(16.25)\left(\frac{4}{5}\right) - 26\left(\frac{100}{125}\right) = -7.8\,kN$

y components:

$(16.25)\sin\theta_1 + 26(\sin\theta_2)$

$(16.25)\left(\frac{3}{5}\right) + (26)\left(\frac{75}{125}\right) = 25.35\,kN$

$Mag = \sqrt{x^2 + y^2} = \sqrt{(7.8)^2 + (25.35)^2}$

$= 26.52\,kN$

$\theta = \tan^{-1}\left(\frac{25.35}{7.8}\right) = 72°$

to get $\sigma = \frac{F}{A} = \frac{26.52 \times 10^{+3}}{490.9 \times 10^{-6}} = 54\,MPa$

$\phi = 25\,mm$

<u>& so on</u> for other rivets