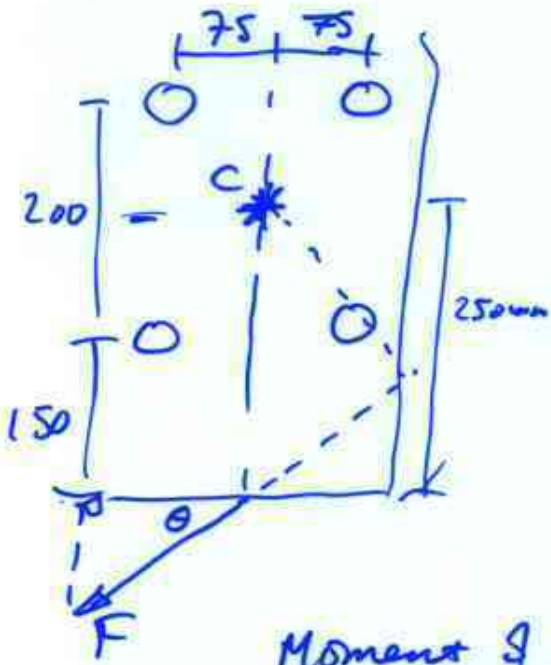


Centroid is very easy to find



$$\frac{\sum x_i A_i}{\sum A_i} = \frac{0 + 0 + 150 + 150}{4}$$

$$= 75$$

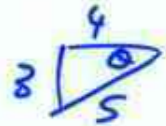
$$\frac{\sum y_i A_i}{A_i} = \frac{(150)(2) + (350)(2)}{4}$$

$$= 250$$

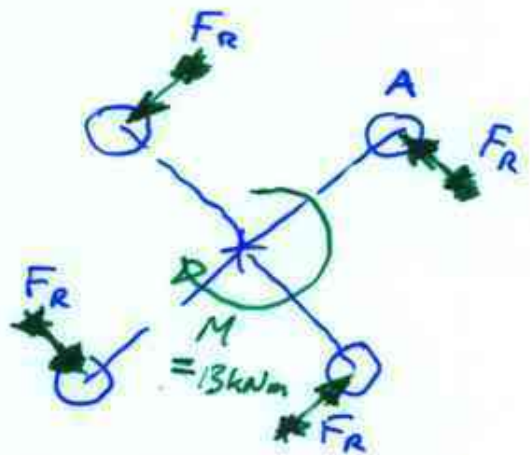
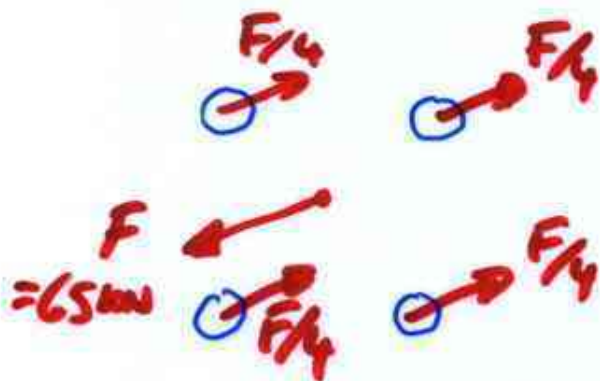
Moment of F about C

$$= (F \cos \theta)(250)$$

$$= F \frac{4}{5} \left(\frac{250}{1000} \right) = 0.2F = \underline{\underline{13 \text{ kNm}}}$$



Forces on each rivet



$$\frac{F}{4} = \frac{65 \text{ kN}}{4} = \underline{\underline{16.25 \text{ kN}}}$$

In this case, radius for each rivet rel. to centroid is same.

+ Areas same

$\Rightarrow F_r = \text{same for all rivets}$

$$\sum M_c = 4 F_r p = M$$

$$F_r = \frac{M}{4p} = \frac{13 \times 10^3}{(4)(125 \times 10^{-3})}$$

$$\frac{125}{75} = \frac{1000}{75}$$