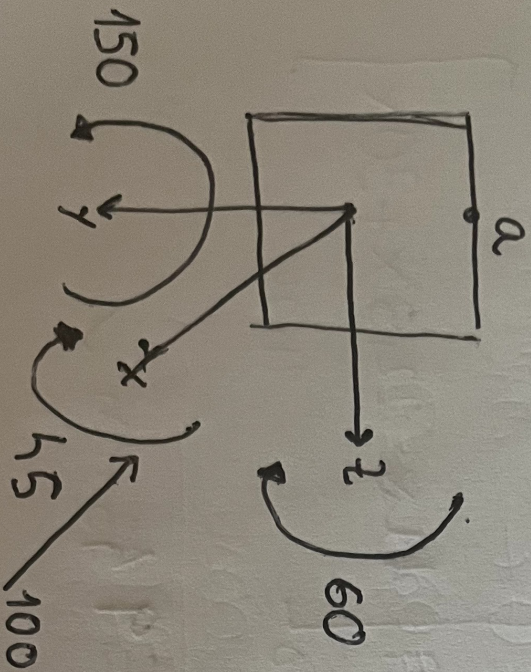
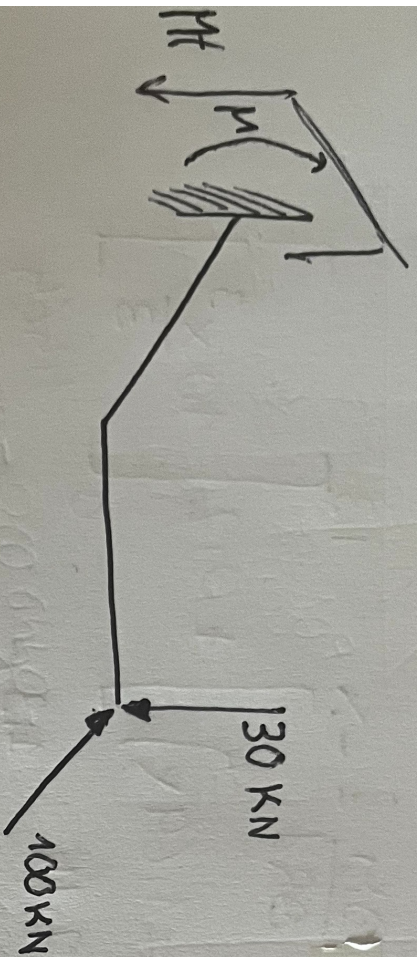


Calculo tension normal y circulo de mohr



$$\sigma = \frac{-100 \cdot 10^3}{300 \cdot 100} + \frac{60 \cdot 10^6 \cdot 50}{25 \cdot 10^6} = 116,66$$

$$\tau = \frac{45 \cdot 10^6}{0,167 \cdot 300 \cdot 100^2} = 56,179$$

$$\sigma_c = 58,33$$

$$\sigma_t = 139,31$$

$$R = 80,198$$

$$\sigma_{II} = -22,65$$

$$\eta = 2,304$$