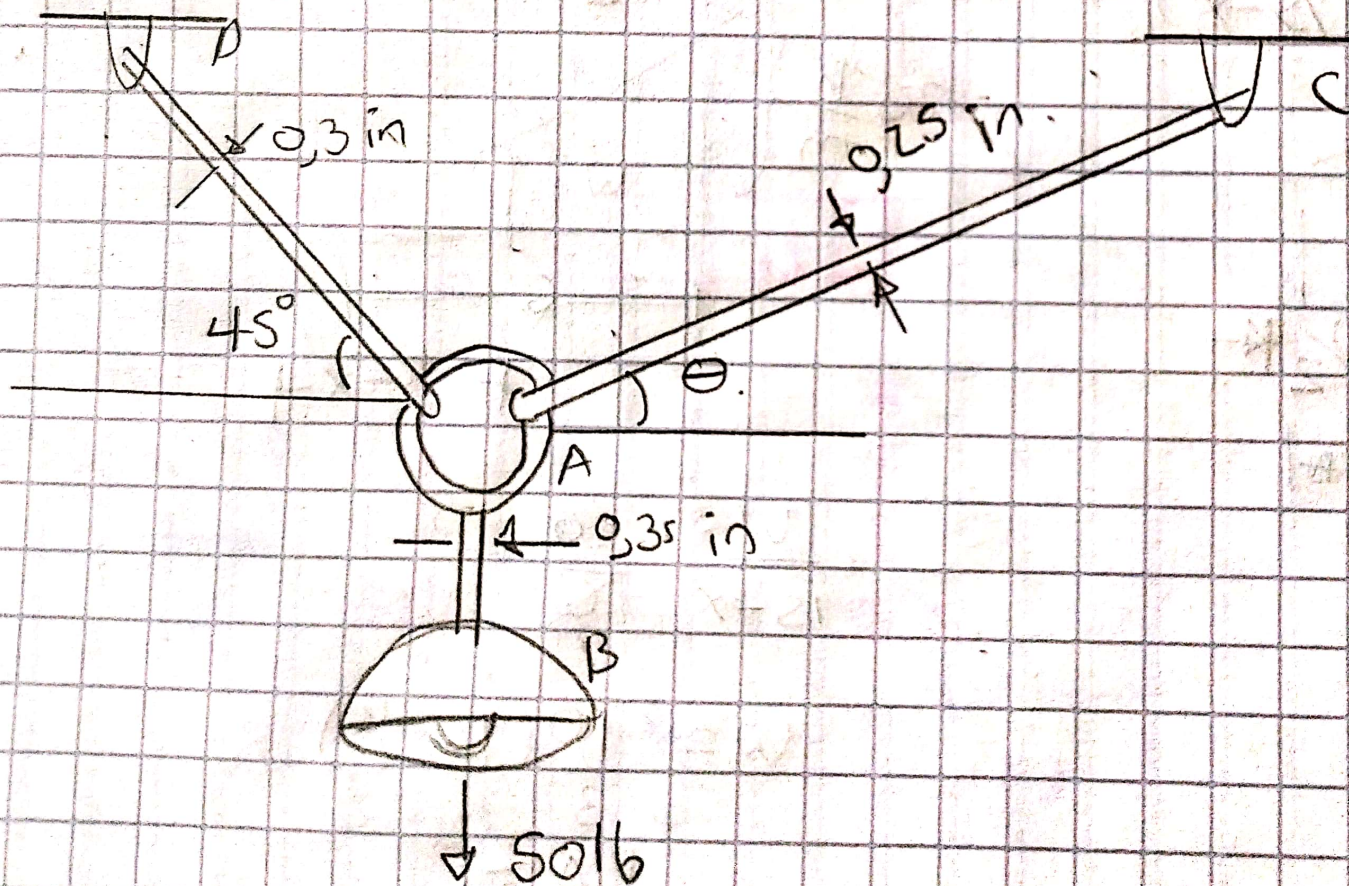


Parcial Brian Sebastian Cáceres Píntun 1803245





$$\sigma_{AD} = \frac{T_{AD}}{A_{AD}} = \frac{4 T_{AD}}{\pi (0,3)^2} = \frac{T_{AD}}{0,070686 \text{ in}^2} = \sigma_{AD}$$

$$T_{AD} = 0,070686 \sigma_{AD} \text{ (1)}$$

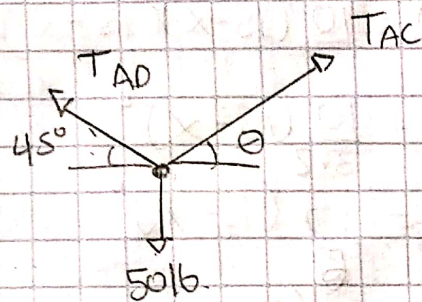
$$\sigma_{AC} = \frac{T_{AC}}{A_{AC}} = \frac{4 T_{AC}}{\pi (0,25)^2} = \frac{T_{AC}}{0,098175 \text{ in}^2} = \sigma_{AC}$$

$$T_{AC} = 0,098175 \sigma_{AD} \text{ (2)}$$

$$\sigma_{AD} = \frac{(5016)^4}{\pi (0,35)^2} = 519,68 \text{ psi}$$



Node A.



$$\sum F_x = 0$$

$$-T_{AD} \cos 45^\circ + T_{AC} \cos \theta = 0 \quad (3)$$

$$-T_{AD} \cos 45^\circ + 2T_{AD} \cos \theta = 0 \quad (1)$$

$$\sum F_y = 0$$

$$T_{AD} \sin 45^\circ + T_{AC} \cos \theta - 50 = 0 \quad (4)$$

① y ② n ③

$$-0,070686 \sigma_{AD} \cos 45^\circ + 0,098175 \sigma_{AD} \cos \theta = 0$$

$$-0,0499 \sigma_{AD} + 0,098175 \sigma_{AD} \cos \theta = 0$$

$$\theta = 54,39^\circ$$

n ④

$$0,098175 \sigma_{AD} \sin(54,39^\circ) + 0,070686 \sigma_{AD} \sin 45^\circ - 50 = 0$$

$$\sigma_{AD} = 387,1 \text{ psi}$$

$$\sigma_{AC} = 2 \sigma_{AD} = 2(387,1) = 774,2 \text{ psi} = \sigma_{AC}$$