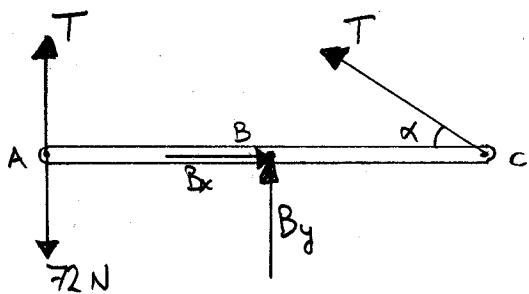


# QUIZ #3 - PROBLÈME 4.77 - SOLUTIONS

Schéma du corps isolé:



\* Poulie sans friction: la tension dans la corde est la même partout = T

$$\alpha = \arctan\left(\frac{70}{240}\right) = 16,26^\circ$$

Conditions d'équilibre:

$$\sum M_B = 0$$

$$= 72(120) - T(120) + T \sin \alpha (120) = 0$$

$$8640 = 864T$$

$$\Rightarrow \boxed{T = 100 \text{ N}}$$

$$\sum F_x = 0$$

$$= B_x - T \cos \alpha = 0$$

$$B_x = T \cos \alpha$$

$$\Rightarrow \boxed{B_x = 96 \text{ N}}$$

$$\sum F_y = 0$$

$$= T - 72 + B_y + T \sin \alpha = 0$$

$$B_y = 72 - 1,28T$$

$$= -56 \text{ N}$$

$$\boxed{B_y = 56 \text{ N} \downarrow}$$

$$\vec{B} = \sqrt{B_x^2 + B_y^2} = 111,14 \text{ N}$$

$$\theta = \arctan\left(\frac{B_y}{B_x}\right) = 30,26^\circ$$

$$\boxed{\vec{B} = 111,14 \text{ N}}$$

