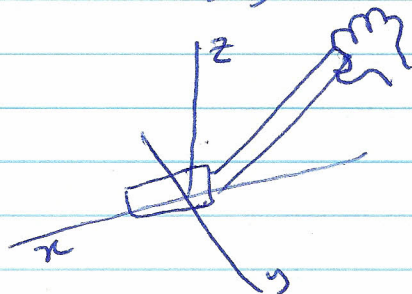


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so we want moment about an axis vertical through A.

$$M_a = u_a \cdot (r \times F)$$

$$u_a = k$$



$$\begin{aligned} r &= (0.75 + 10 \cos 30^\circ) i + 10 \sin 30^\circ k \\ &= 9.41 i + 5 k \end{aligned}$$

$$F = -100 j - P j$$

$$r \times F = \begin{vmatrix} i & j & k \\ 9.41 & 0 & 5 \\ 0 & -P & 0 \end{vmatrix}$$

$$= i[0] - j[0] + k[-752.8]$$

$$= -752.8 k$$

$$M_a = k \cdot (-752.8 k) = -752.8 \text{ lb}\cdot\text{in}$$

$$= k[9.41(-P)] = -9.41 P k$$

$$M_a = k \cdot (-9.41 P k) = -9.41 P$$

but $M_a = 80 \text{ lb}\cdot\text{in}$

$$-9.41 P = 80 \Rightarrow P = -8.5 \text{ lb.}$$