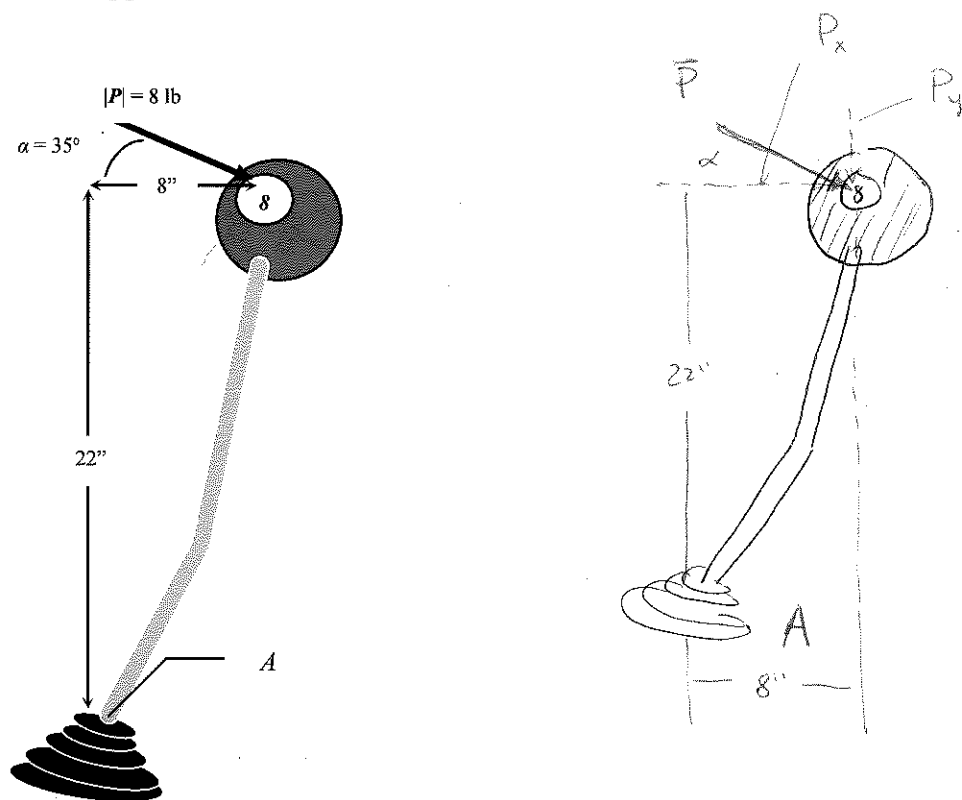


Example

A force of 8 lbs is applied to the gearshift as shown in the figure. Calculate the moment about point A due to the applied force.



Easiest method is to break \bar{P} into components:

$$\begin{aligned} \textcircled{A} \quad M_A &= -(22'') [P \cos \alpha] - (8'') [P \sin \alpha] \\ &= -(22 \text{ in})(8 \text{ lb} \cos 35^\circ) - (8 \text{ in})(8 \text{ lb} \sin 35^\circ) \\ &= \boxed{-181 \text{ in}\cdot\text{lb}} \end{aligned}$$