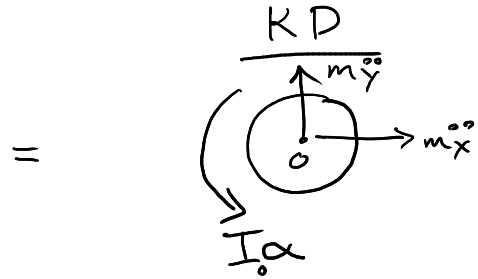
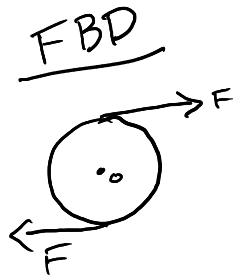


$$r \cdot F = \tau = I \alpha$$

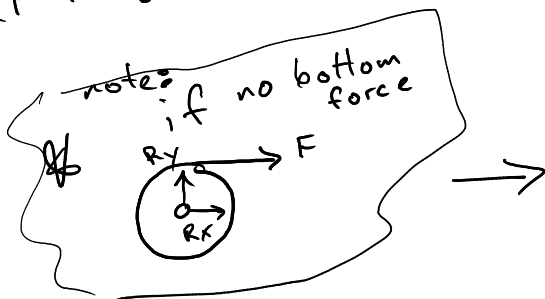
$$I = \text{moment of inertia} \\ \left[ \frac{m R^2}{2} \right]$$



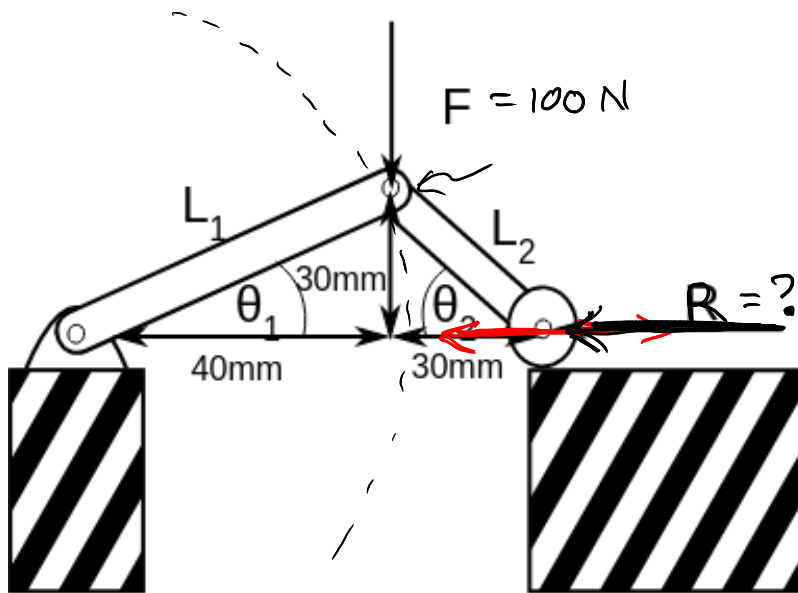
$$\sum M_o = -rF - rF = I_o \alpha$$

$$F = -\frac{I_o \alpha}{2r}$$

what if?



$$-rF = I_o \alpha$$



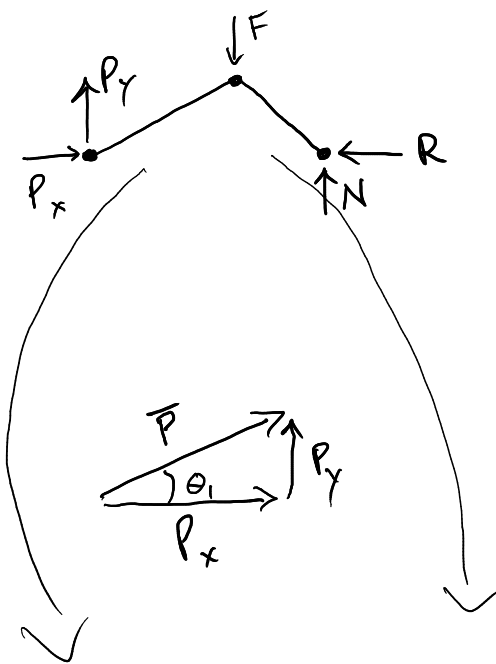
quasistatic

$$\sum F_x = 0$$

$$\sum F_y = 0$$

$$\sum M = 0$$

FBD

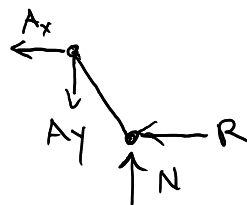
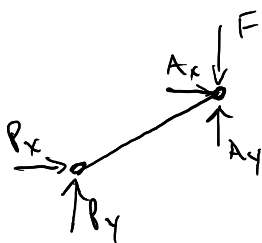


$$\sum F_x = R_x - R = 0$$

$$\sum F_y = R_y + N - F = 0$$

$$R_x = R$$

$$R_y + N = F$$

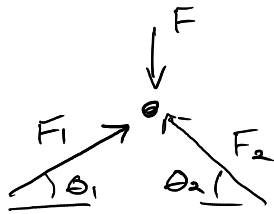


$$\sum F_x = P_x - R = 0$$

$$\sum F_y = P_y + N - F = 0$$

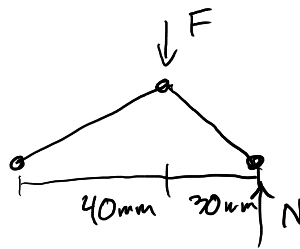
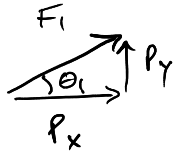
$$\sum F_x = -R - A_x = 0 \Rightarrow A_x = -R$$

$$\sum F_y = N - A_y = 0 \quad N = A_y$$



$$R = P_x$$

$$P_y + N = F$$



$$\sum M = 70 \cdot N - 40 \cdot F$$

$$N = \frac{4}{7} \cdot F$$