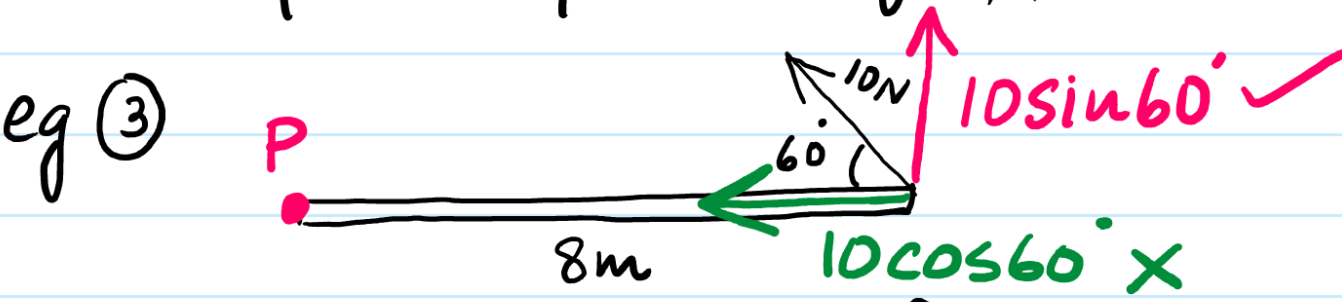
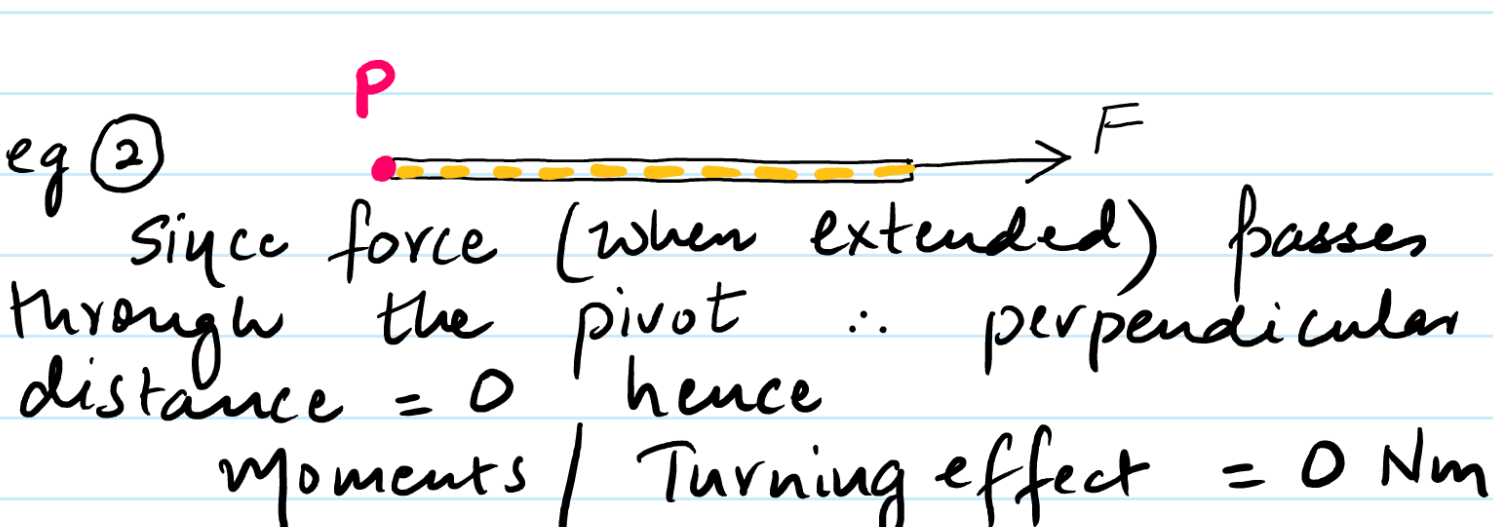
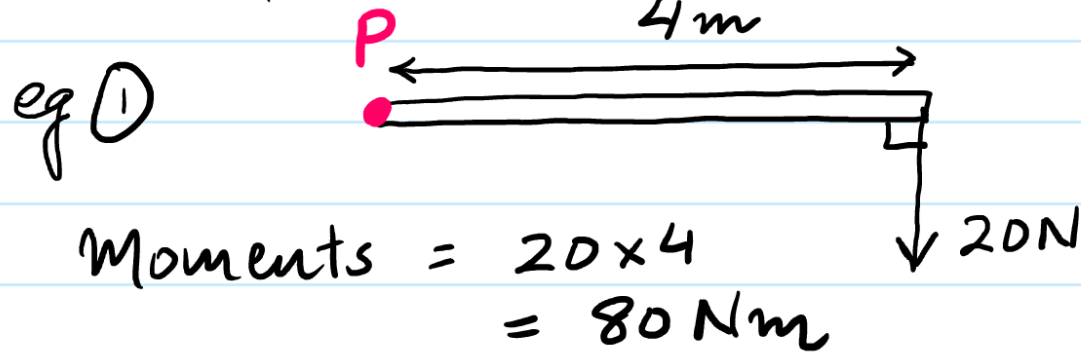
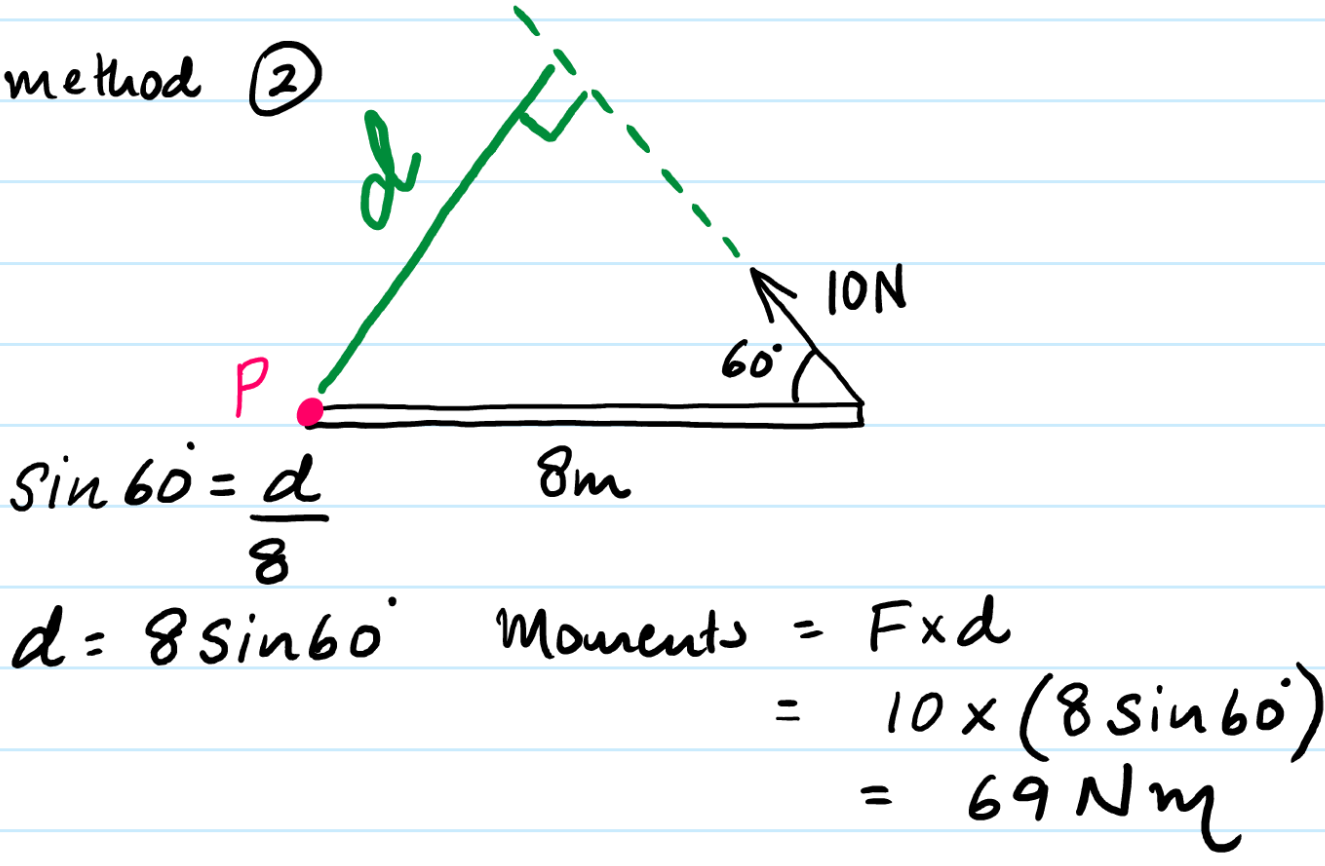


"Turning effect of a force also called moments of a force"

definition :: Product of forces and the perpendicular distance b/w the force and the pivot.



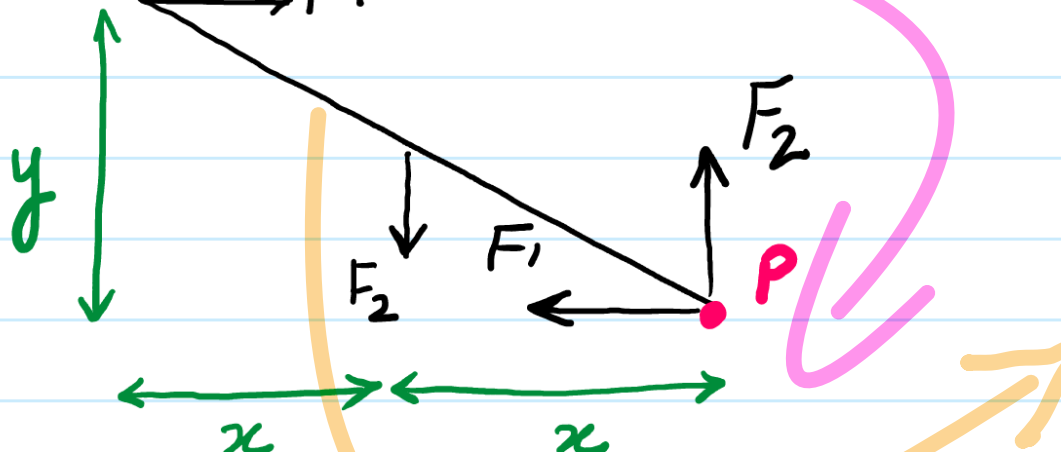
method ① **Resolve the force**  
moments =  $F \times d = (10 \sin 60) \times (8) = 69 \text{ Nm}$



- What are the conditions for Equilibrium
- ① Turning effect = 0 (i.e. C.W.M = A.C.W)
- ② Resultant force = 0 (upward force = downward force, Left force = right force).

• Graph of F vs d ?  
Moment =  $F \times d$   $F \propto \frac{1}{d}$  (inversely prop.)

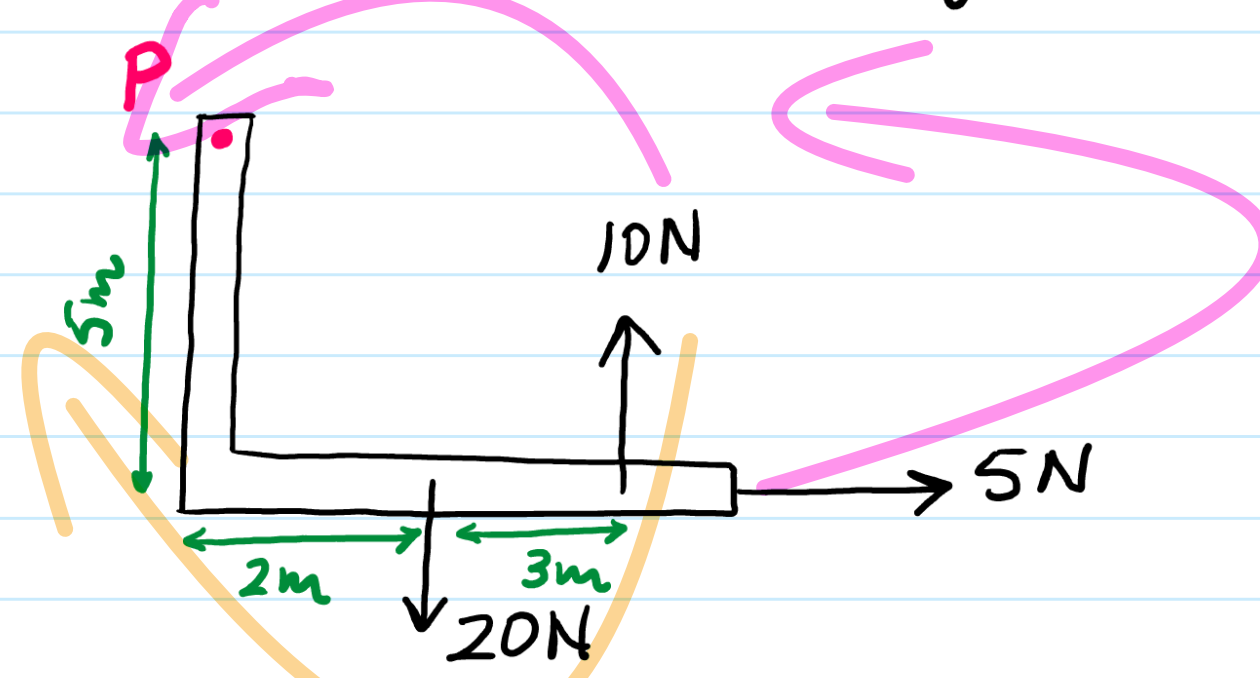
Q How to form equation using Principle of Moments.



Apply Principle of moments taking P as a pivot to form an equation given that rod is in EQ?  
C.W  $F_1 \times y$   
A.C.W  $F_2 \times x$   $F_1 \cdot y = F_2 \cdot x$

Q// How to find the Resultant moments?

• Concept of resultant moments will only arise if one Turning effect (either C.W or A.C.W) is greater / lesser than the other Turning effect for eg.



Cal. the Resultant Turning effect ?  
A.C.W =  $5 \times 5 = 25 \text{ Nm}$  | C.W =  $20 \times 2 = 40 \text{ Nm}$   
A.C.W =  $10 \times 5 = 50 \text{ Nm}$  |  $= 40 \text{ Nm}$   
75 Nm | 40 Nm

Resultant Moments  
Resultant Torque = 35 Nm (ACW).  
Resultant T.e effect