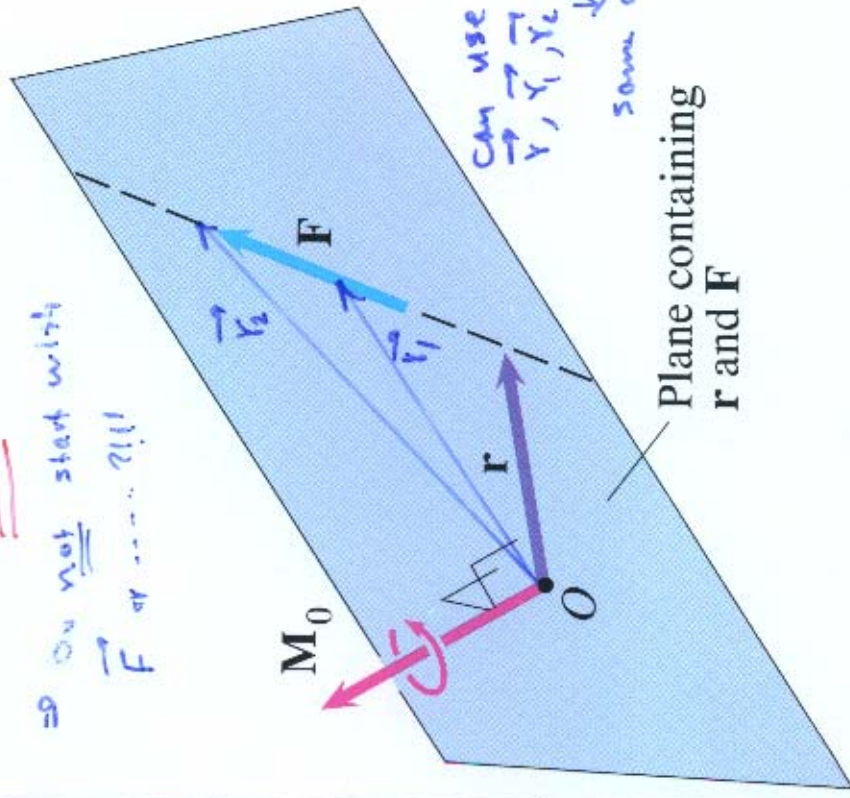


Moment of a Force: Vector Formulation

$$\vec{M}_0 = \vec{r} \times \vec{F}$$

$M_0$  is NOT  $\vec{F} \times \vec{r}$

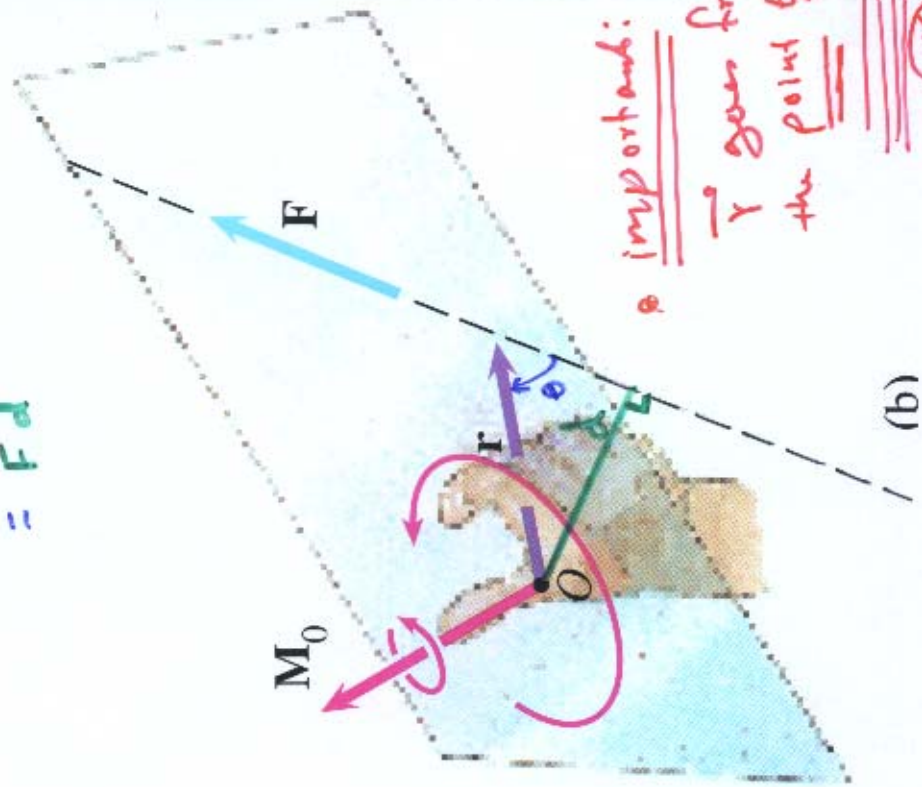
⇒ Do not start with  $\vec{F}$  or ... ?!!



Can use  $\vec{r}, \vec{r}_1, \vec{r}_2, \dots$  etc.   
 same answer !!

(a)

$$\begin{aligned} \vec{M}_0 &= \vec{r} \times \vec{F} \\ M_0 &= r F \sin \theta \\ &= F (r \sin \theta) \\ &= Fd \end{aligned}$$



important:   
  $r$  goes from the point to  $\vec{F}$    
 (\*)

Principle of Transmissibility:

The force can be slid along its line of action.

The same moment is obtained ⇒ Force is a sliding vector.