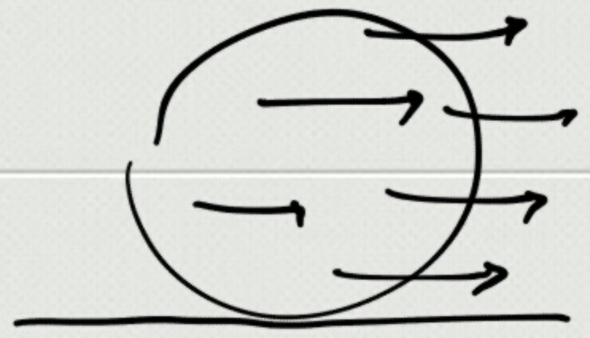
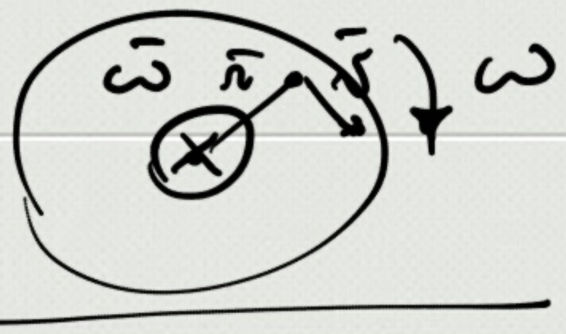
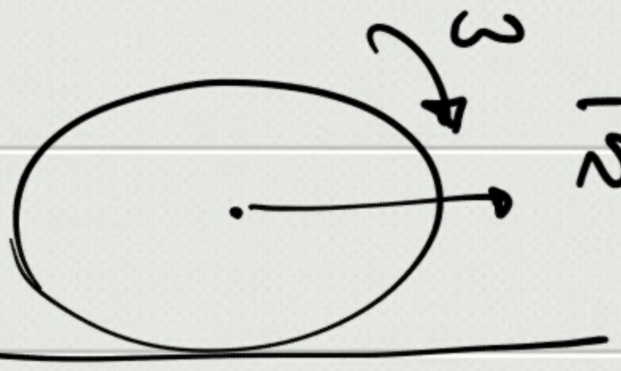


traslazione $\quad \bar{v} = \bar{v}_{CM}$

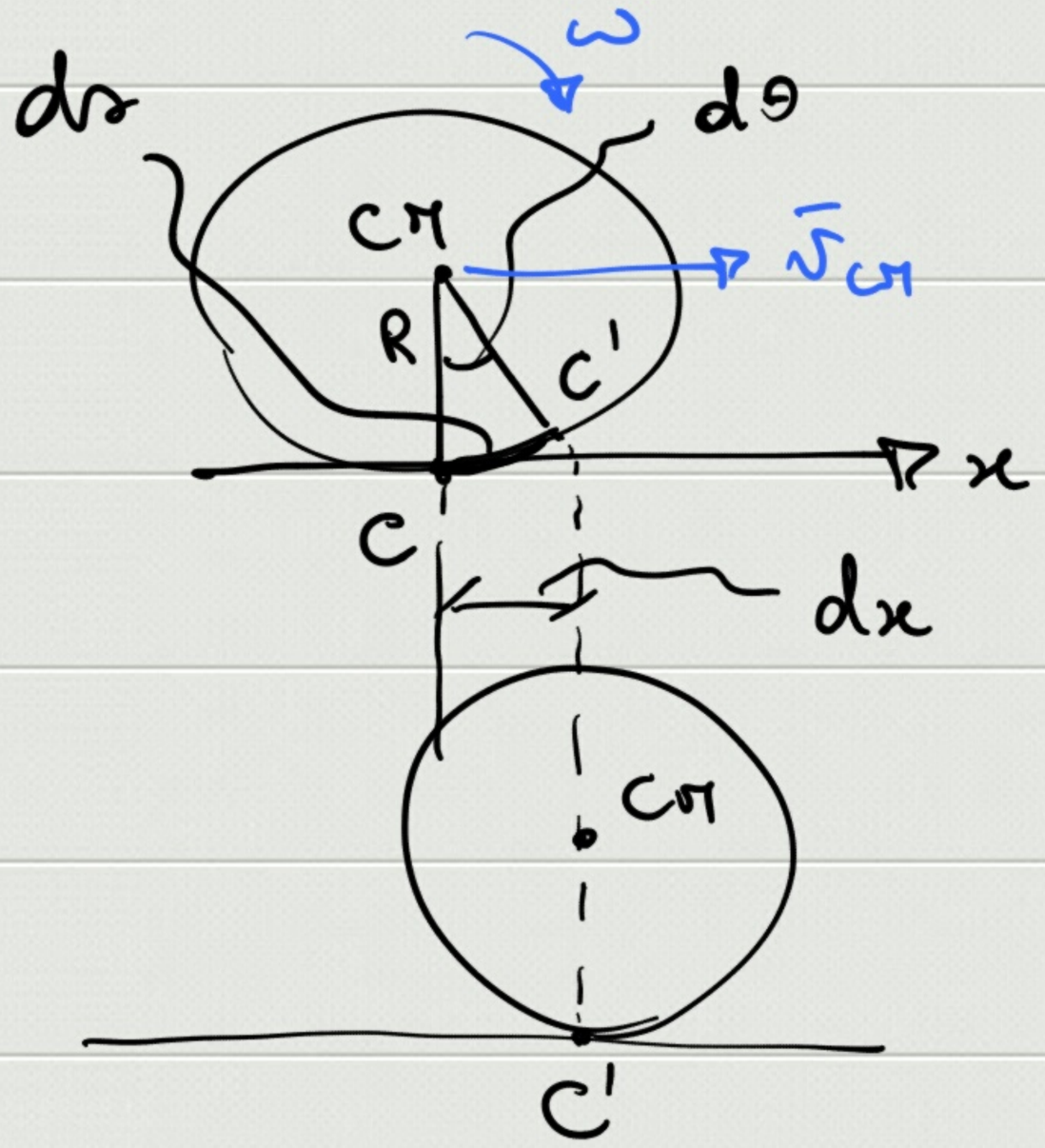


pura rotazione $\quad v_{CM} = 0$

$$\bar{v} = \bar{\omega} \times \bar{r}$$



Rototraslazione



$dt \qquad \bar{v}_{CM}, \bar{\omega}$

$$dx = v_{CM}\, dt$$

$$dx = ds = R\, d\vartheta$$

$$\Updownarrow$$

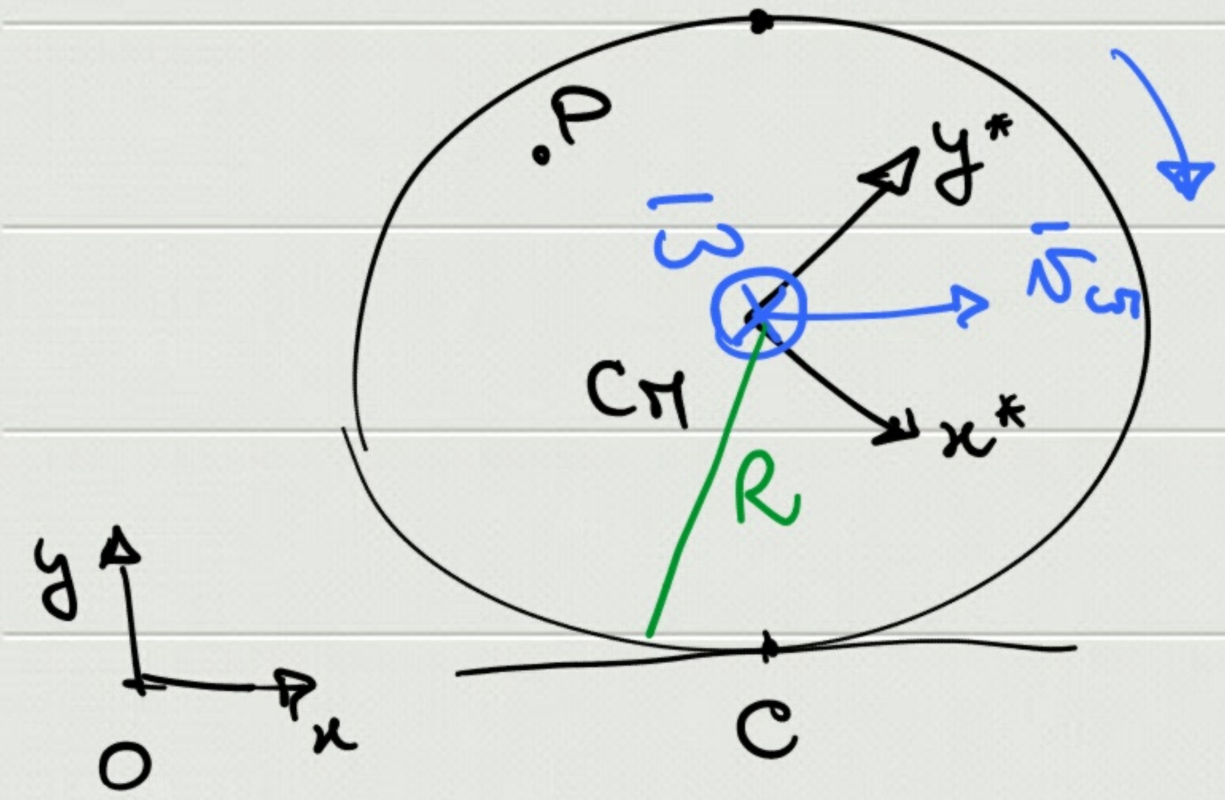
$$v_{CM}\, dt$$

$$\Rightarrow \quad v_{CM} = R \frac{d\vartheta}{dt} = R\omega \quad \Rightarrow \quad \boxed{v_{CM} = \omega R}$$

puro rotolamento

$$\boxed{v_{CM} = \omega R} \quad : \frac{d}{dt} \Rightarrow \boxed{a_{CM} = \alpha R}$$

A



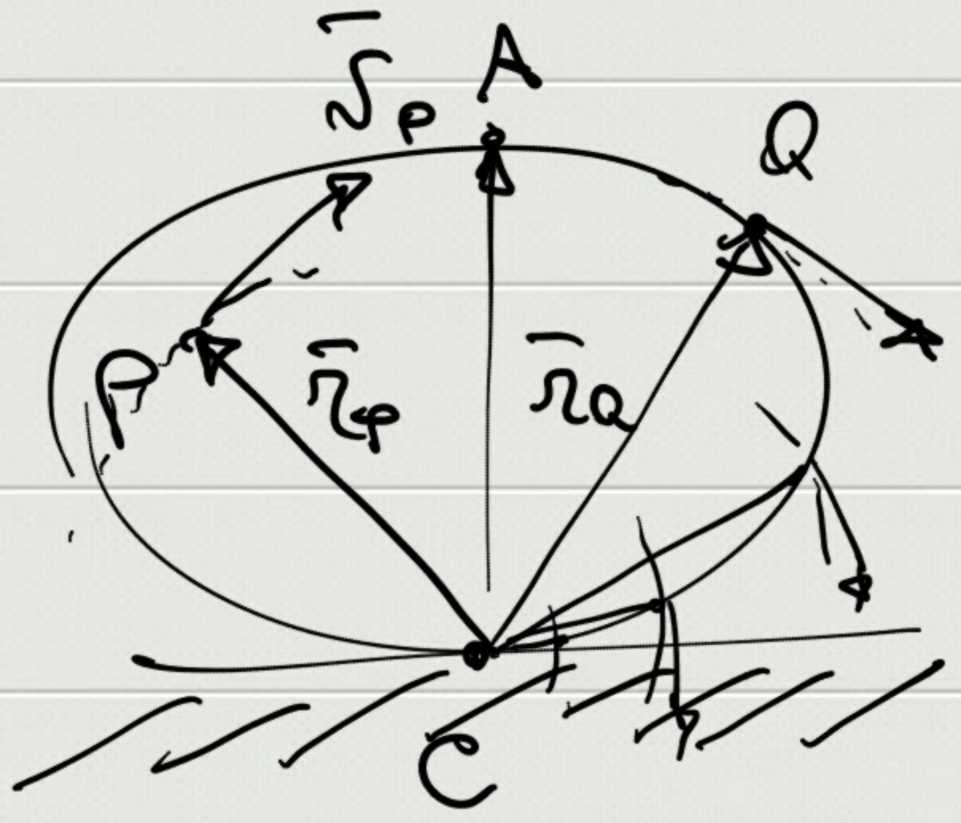
CM $x^* y^*$: solidale al corpo

$$\bar{v}_P = \bar{v}'_P + \bar{v}_{O'} + \bar{\omega} \times \bar{r}'_P$$

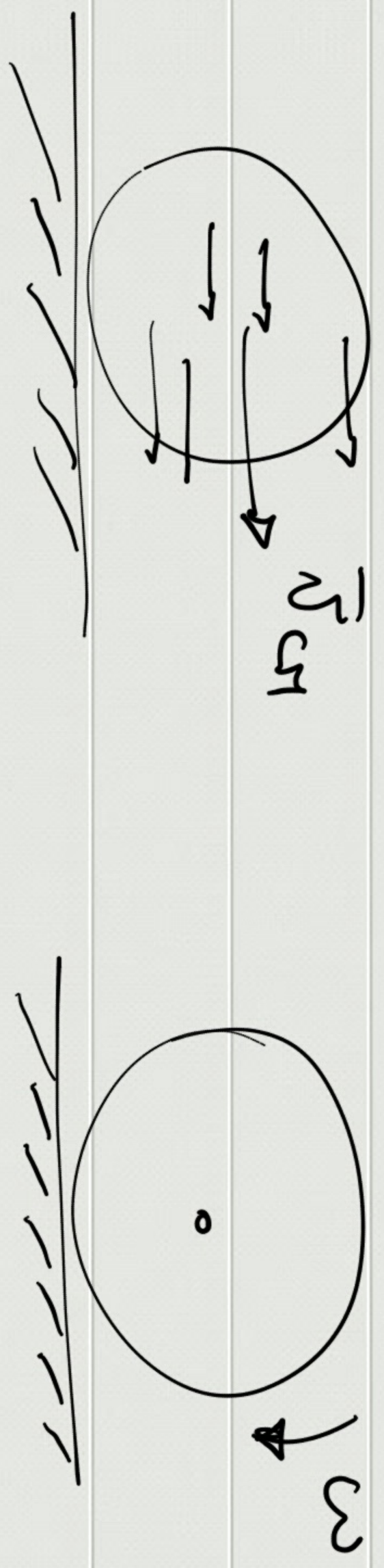
$$\Rightarrow \boxed{\bar{v}_P = \bar{v}_{CM} + \bar{\omega} \times \bar{r}'_P}$$

$$\bar{v}_A = \omega R \bar{u}_x + \omega R \bar{u}_x = 2\omega R \bar{u}_x = 2\bar{v}_{CM}$$

$$\bar{v}_C = \omega R \bar{u}_x + \omega R (-\bar{u}_x) = 0$$



$$\bar{v} = \bar{\omega} \times \bar{r}$$


5
4
3
2
1
0