MOTO ARMONICO

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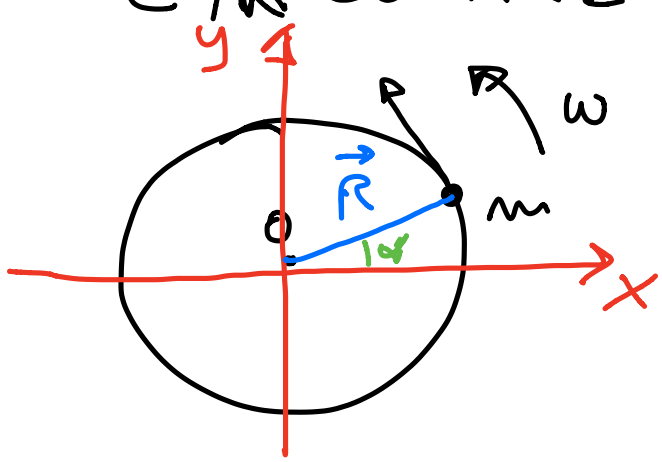
RICORDIAMO IL MOTO CIRCOLARE UNIFORME

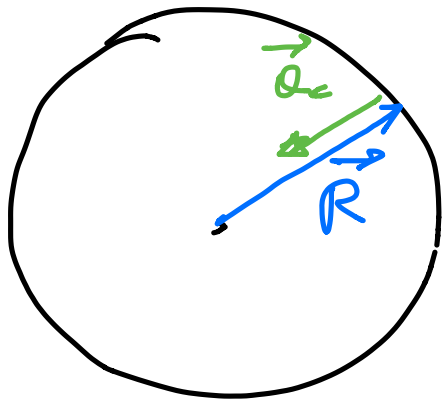


$$\omega = \frac{\Delta\alpha}{\Delta t} = \text{cost.}$$

$$\omega = \frac{2\pi}{T}$$

$$v = \omega \cdot R$$

$$\vec{a}_c = -\omega^2 \vec{R}$$



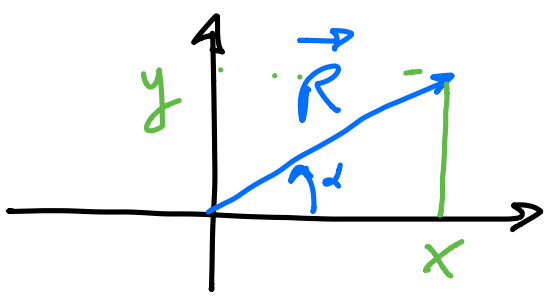
$\vec{a}_c$ e $\vec{R}$

sono //

ma opposti come verso:

$$\vec{a}_c = -\omega^2 \vec{R}$$

INOLTRE:



$$\begin{cases} x = R \cdot \cos(\alpha) \\ y = R \cdot \operatorname{sen}(\alpha) \end{cases}$$

MA: $\omega = \dfrac{\Delta\alpha}{\Delta t} = \dfrac{\alpha - \alpha_0}{t - t_0}$

PER CUI:

$$\alpha = \alpha_0 + \omega(t - t_0)$$

SE $\alpha_0 = 0$ e $t_0 = 0$ ALLORA:

$$\alpha = \omega \cdot t$$

E

$$\boxed{\begin{aligned} x &= R \cdot \cos(\omega t) \\ y &= R \cdot \operatorname{sen}(\omega t) \end{aligned}}$$

LEGGE ORARIA DEL MOTO ARMONICO

$$\vec{a}_c = -\omega^2 \vec{R} \xrightarrow{\times} a_x = -\omega^2 x$$

$$\vec{a}_c = -\omega^2 \vec{R} \longrightarrow a_y = -\omega^2 y$$

$$\downarrow$$

IN GENERALE:

$$\boxed{\text{ACCEL.} = -\begin{pmatrix}\text{COSTANTE} \\ \text{POSITIVA}\end{pmatrix} \cdot \text{POSIZIONE}}$$

$\downarrow$

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