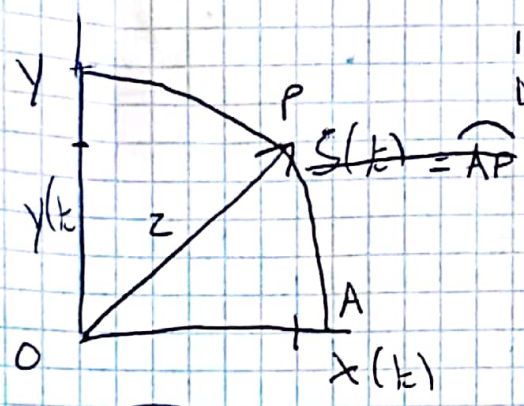
MOTO CIRCOLARE UNIFORME



IL PUNTO P ~~AREA~~ DESCRIVE ARCHI DI CIRCONFENENZA UGUALE IN UGUALI ARCHI DI TEMPO

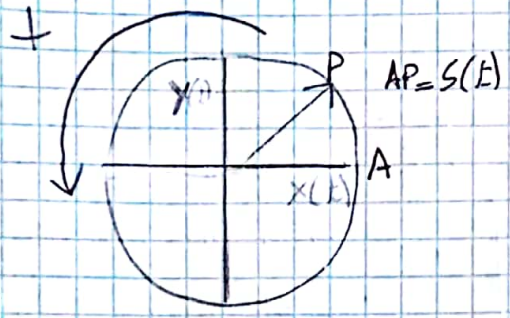
$S(t) = \overset{\frown}{AP} \Rightarrow x^2(t) + y^2(t) = z^2 =$

$\left(\frac{x}{z}\right)^2 + \left(\frac{y}{z}\right)^2 = 1$

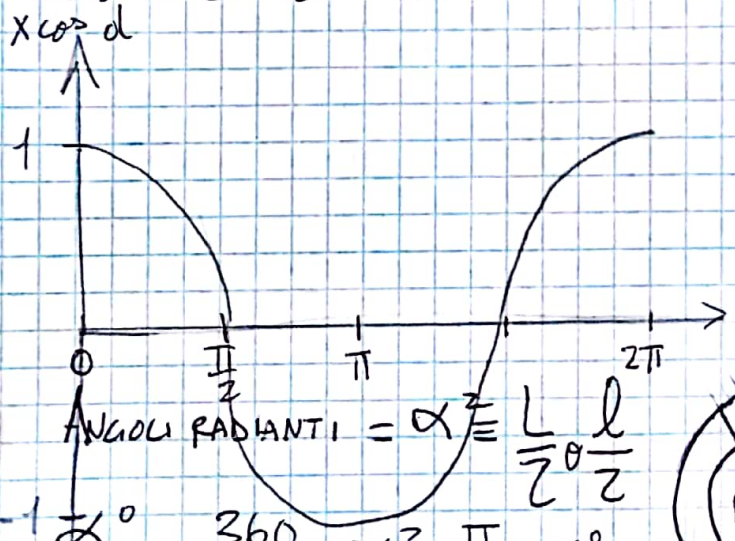
$\Downarrow$

$\cos\alpha^2 + \operatorname{sen}\alpha^2 = 1$

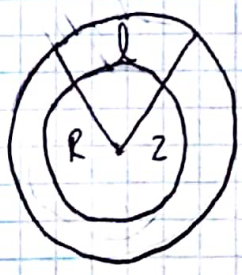
$x = z\cos\alpha \quad y = z\operatorname{sen}\alpha$



ascisse nell'unità del raggio $= \frac{x}{z}$

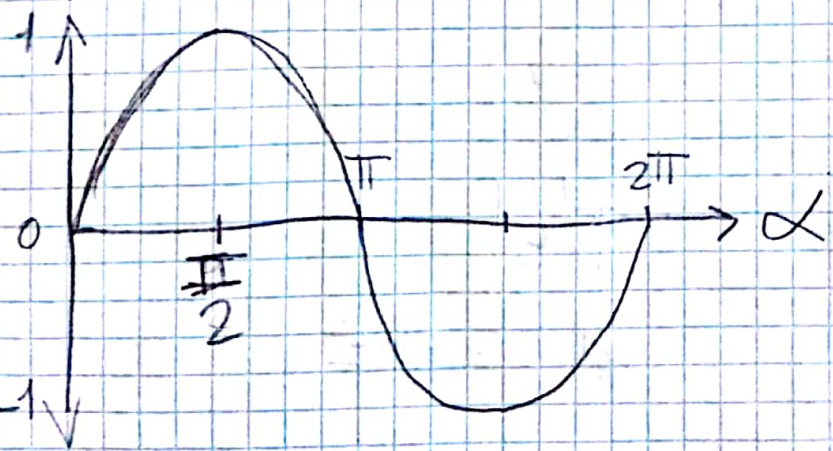


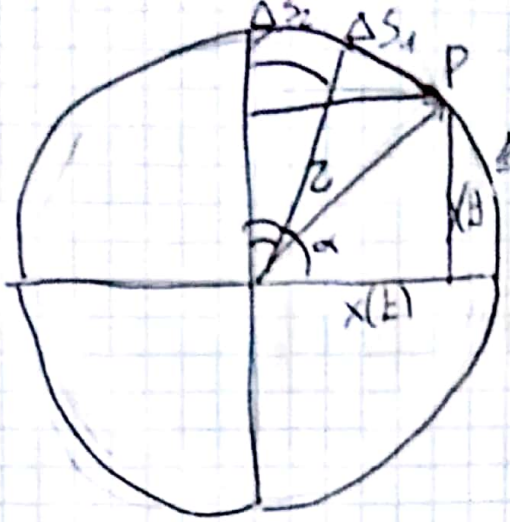
ANGOLI RADIANTI $= \alpha^2 \equiv \frac{L}{z}$ o $\frac{l}{z}$



?

$\frac{\alpha^\circ}{\alpha^2} = \frac{360}{2\pi} = \alpha^2 = \frac{\pi}{180}\alpha^\circ$

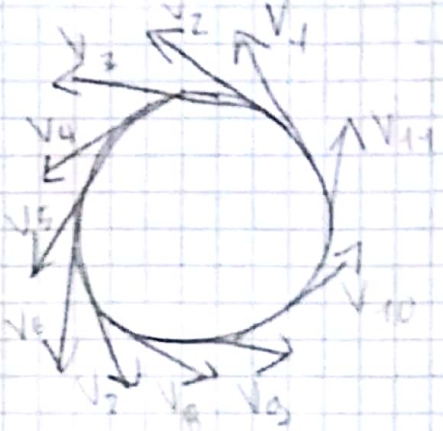




$$\frac{\Delta s_1(t)}{\Delta t_1} = \frac{\Delta s_2(t)}{\Delta t_2} =$$

$$\frac{\Delta s_3(t)}{\Delta t_3} = \frac{\Delta s(t)}{\Delta t}$$

costante $= v$

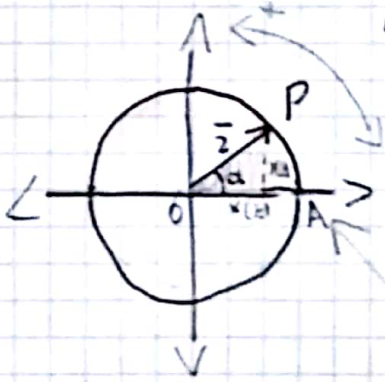


V_1 e V_2 = VERSO

$\neq$ DIREZIONE

= MODULO

MOTO ACCELERATO



$AP = s(t)$

$$x^2(t) + y^2(t) = R^2$$

$$\left(\frac{x}{r}\right)^2 + \left(\frac{y}{r}\right)^2 = 1$$

$\cos\alpha + \text{sen}\alpha = 1$

$$\frac{\Delta\alpha_1}{\Delta t_1} = \frac{\Delta\alpha_2}{\Delta t_2} \dots = \frac{\Delta\alpha}{\Delta t} =$$

$$\frac{\Delta s_1}{\Delta t_1} = \frac{\Delta s_2}{\Delta t_2} = \frac{\Delta s_3}{\Delta t_3} =$$

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

$$\frac{\Delta s}{\Delta t}\left(\frac{\text{SPAZIO}}{\text{TEMPO}} \text{ costante}\right) = v = \frac{2\pi r}{T}$$

ωR

$$ds = \frac{2\pi R}{T} dt \Rightarrow$$

$$s(t) = \frac{2\pi R}{T} t$$

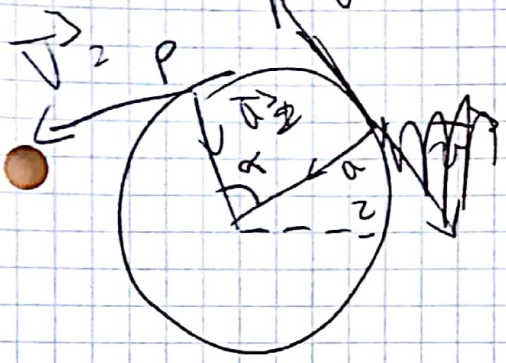
MOTO CIRCOLARE UNIFORME → MOTO PERIODICO

TEMPI = ARCHI =

- V = costante
- a = costante
- $\vec{a} \perp V$

ACCELERAZIONE CENTRIPETA

$$a_c = \frac{v^2}{r}$$



$$T = \frac{2\pi r}{v} \rightarrow V = \frac{2\pi}{T} r$$

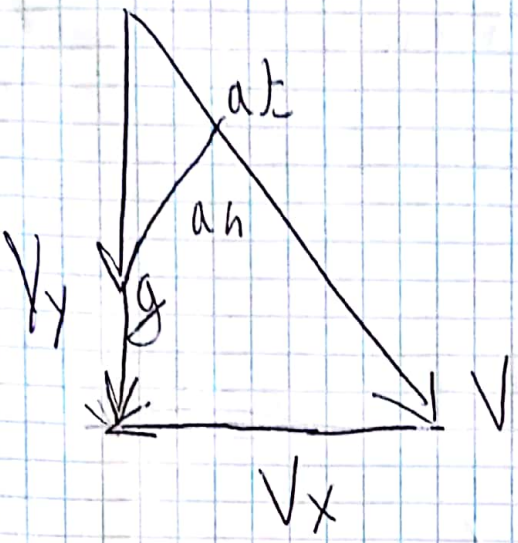
PERIODO (giro completo)

$$\omega r$$

$$f = \nu = \frac{1}{T} \qquad \left[\frac{1}{s}\right] = [Hz]$$

$$\omega \equiv \frac{\Delta \alpha}{\Delta t} = \frac{2\pi}{T} = 2\pi\nu$$

↑ VELOCITÀ ANGOLARE



$$\frac{a_n}{V_0} = \frac{g}{V} \Rightarrow a_n = \frac{gV_x}{\sqrt{V_0^2 + (gt)^2}}$$