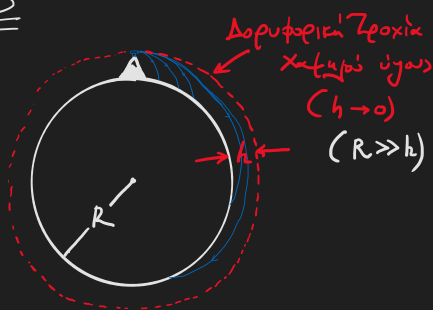


Τρ 27.11.2020

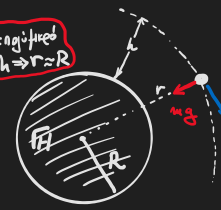
B+2

1° ΓΕΛ
ΣΑΛΑΜΙΝΑΣ

7 β
 $\phi \pi$



$h \rightarrow 0 \Rightarrow r = R$
 $r = R + h \Rightarrow r \approx R$



Το μισό είναι αρκετά μικρό
όσο $h \rightarrow 0$ τότε $g = 6 \text{ m/s}^2$

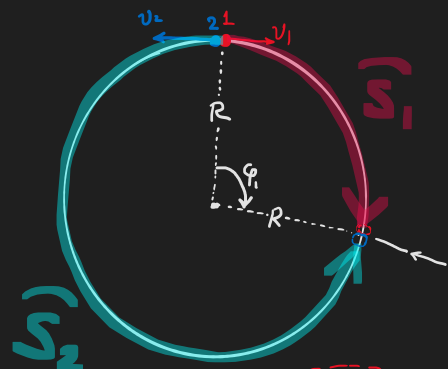
$$\begin{aligned} \Sigma F_{\text{κεντ}} &= F_c \\ \downarrow & \downarrow \\ \cancel{m}g &= \cancel{m} \frac{v^2}{r} \\ g \cdot r &= v^2 \\ \boxed{v = \sqrt{g \cdot r}} & \quad v \approx R \end{aligned}$$

$$\begin{aligned} \rightarrow \boxed{v = \sqrt{g \cdot R}} & \quad \left. \begin{aligned} g &= 10 \text{ m/s}^2 \\ R &= 6400 \text{ km} = 6400000 \text{ m} \end{aligned} \right\} \Rightarrow \dots \Rightarrow \boxed{v = 8000 \frac{\text{m}}{\text{s}} \approx 2 \cdot 10^4 \frac{\text{m}}{\text{s}}} \end{aligned}$$

6 $\phi \pi$

$$\begin{aligned} v_1 &= 10 \text{ m/s} \\ v_2 &= 20 \text{ m/s} \\ R &= 1 \text{ m} \\ \text{Ποσ } \frac{1}{2} \pi \cdot 2 \pi & \\ \rightarrow \frac{1}{2} \pi \cdot 2 \pi & \\ \rightarrow \frac{1}{2} \pi \cdot 2 \pi & \end{aligned}$$

β)



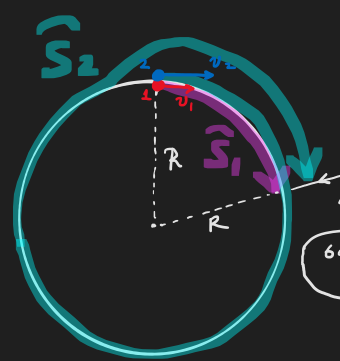
$$\begin{aligned} \text{OKK} \quad \text{OKK} \\ \vec{S}_1 + \vec{S}_2 &= 2\pi R \\ v_1 t + v_2 t &= 2\pi R \\ 10t + 20t &= 2\pi \cdot 1 \\ 30t &= 2\pi \\ t &= \frac{2\pi}{30} \Rightarrow \\ &= \boxed{t = \frac{\pi}{15} \text{ sec}} \quad \text{Πόση?} \end{aligned}$$

$$\begin{aligned} \vec{S}_1 &= v_1 t = 10 \frac{\pi}{15} \Rightarrow \\ &= \boxed{\vec{S}_1 = \frac{2\pi}{3} \text{ m}} \quad \text{Πόση?} \\ \vec{S}_2 &= v_2 t = 20 \frac{\pi}{15} \Rightarrow \\ &= \boxed{\vec{S}_2 = \frac{4\pi}{3} \text{ m}} \quad \text{Πόση?} \end{aligned}$$

2η προηγ: $\vec{S}_1 + \vec{S}_2 = 2\pi R$
 Check...

$$\text{h) } \varphi_1 = \omega_1 t = \frac{v_1}{R} t = \frac{10}{1} \cdot \frac{\pi}{15} \Rightarrow \boxed{\varphi_1 = \frac{2\pi}{3} \text{ rad}} \quad \text{Πόση?}$$

α)



$$\begin{aligned} \vec{S}_2 &= \vec{S}_1 + 2\pi R \Rightarrow \\ v_2 t &= v_1 t + 2\pi R \Rightarrow \\ 20t &= 10t + 2\pi \cdot 1 \Rightarrow \\ 20t - 10t &= 2\pi \Rightarrow \\ 10t &= 2\pi \Rightarrow \\ t &= \frac{2\pi}{10} \text{ sec} \quad \text{Πόση?} \end{aligned}$$

$$\begin{aligned} \vec{S}_1 &= v_1 t = 10 \cdot \frac{2\pi}{10} \Rightarrow \\ &= \boxed{\vec{S}_1 = 2\pi \text{ m}} \quad \text{Πόση?} \\ \vec{S}_2 &= v_2 t = 20 \cdot \frac{2\pi}{10} \Rightarrow \\ &= \boxed{\vec{S}_2 = 4\pi \text{ m}} \quad \text{Πόση?} \end{aligned}$$

$$\begin{aligned} \text{Γράφω: } R &= 1 \text{ m} \\ \text{όχι } 2\pi R &= 2\pi \text{ m} \\ \downarrow \\ \vec{S}_1 &= 1 \text{ περιστροφή} \rightarrow \\ \vec{S}_2 &= 2 \text{ περισφορές} \rightarrow \end{aligned}$$



HW : η προετοιμασία

16, 17, 19, 21