ESERCIZIO 4

RISPOSTA 1

$r = 40\ m$

EQUILIBRIO: $mg\frac{b}{2} = m\frac{v^2}{r}\cdot h \Rightarrow g\frac{b}{2} = \frac{v^2}{r}h \Rightarrow$

$$v^2 = \frac{rgb}{2h} \Rightarrow v = \sqrt{\frac{rgb}{2h}}$$

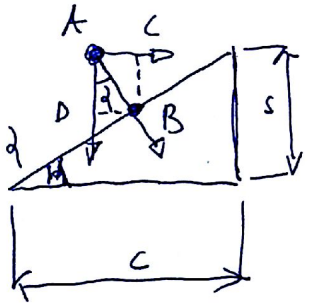
$$= \sqrt{\frac{40 \cdot 9{,}81 \cdot 1{,}40}{2 \cdot 0{,}63}}$$

$$= 20{,}88\ \frac{m}{s}$$

RISPOSTA 2

$\Delta v = 15\ \frac{km}{h} \Rightarrow \Delta v = 4{,}16\ \frac{m}{s}$

$v_{LIMITE} = 20{,}88 + 4{,}17 = 25{,}05\ \frac{m}{s}$



$tg\,\alpha = \frac{s}{c}$ $\quad \alpha = arctg\left(\frac{s}{c}\right)$

$= arctg\left(\frac{s}{8}\right)$ *

ALL'EQUILIBRIO: $mg\,\overline{DB} = m\frac{v^2}{r}\overline{CB}$

$mg\,\overline{AB}\,sen\alpha = m\frac{v^2}{r}\overline{AB}\cos\alpha \Rightarrow \frac{sen\,\alpha}{\cos\alpha} = \frac{v^2}{rg}$

$tg\,\alpha = \frac{v^2}{rg}$ $\quad \alpha = arctg\left(\frac{v^2}{rg}\right)$

$\Rightarrow$ redi * $\frac{s}{8} = \frac{v^2}{rg}$ $\quad s = \frac{25{,}05^2 \cdot 8}{40 \cdot 9{,}81} = 12{,}79\ m$