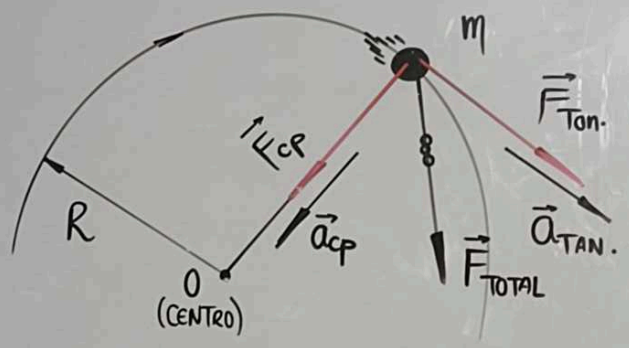
DINÁMICA CIRCULAR.



TANGENCIAL

$F_{TAN} = m\, a_{TAN}$

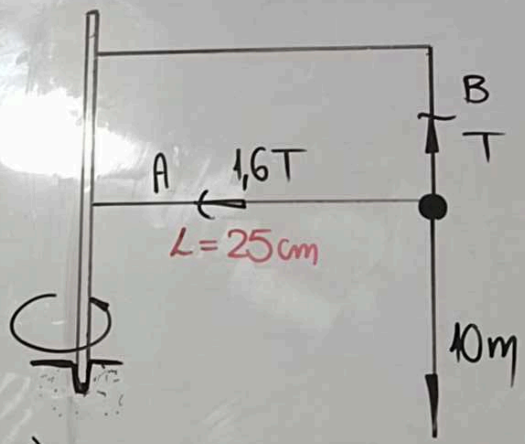
Radial.

$F_{cp} = m\, a_{cp}$

$F_{cp} = \Sigma F_{entran} - \Sigma F_{salen.}$

$a_{cp} = \omega^2 R$ (rad/s) $\quad a_{cp} = \frac{V_T^2}{R}$ (m/s).

(22).



*) $T = 10m$

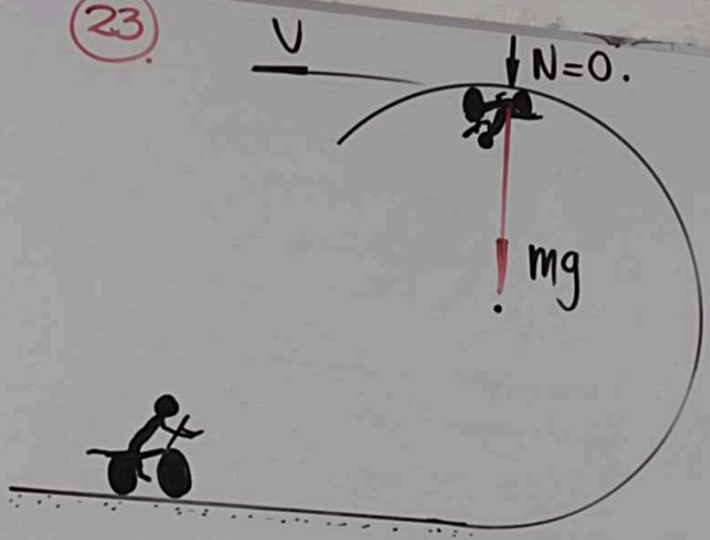
*) $F_{cp} = m\, a_{cp}$

$1,6T = m \cdot \omega^2 R$

$1,6(10m) = m \cdot \omega^2 \cdot \left(\frac{1}{4}\right)$

$\omega = 8$ rad/s !

(23)



*) $\underbrace{F_{cp}}_{} = m \underbrace{a_{cp}}_{}$

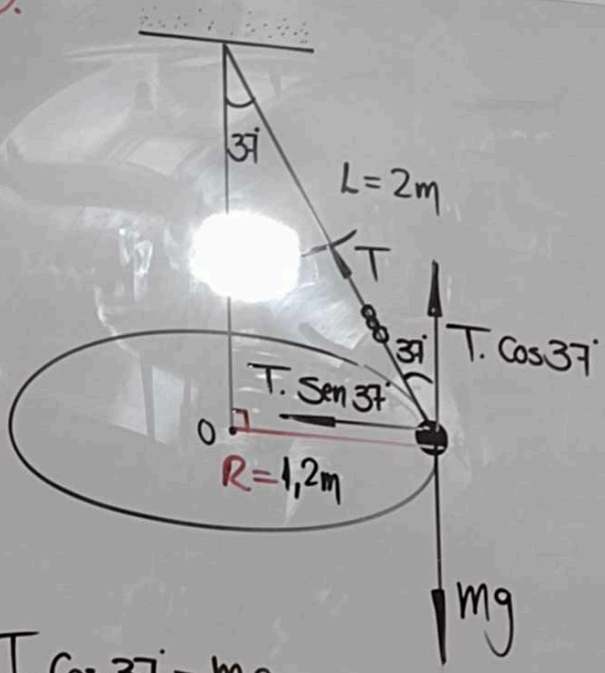
$mg = m \cdot \frac{V^2}{R}$

$gR = V^2$

$(10)(1,6) = V^2$

$V = 4\ m/s$!

(19)



✓ $T \cdot \cos 37° = mg$

✓ $\underbrace{F_{cp}}_{} = m\ a_{cp}$

$T \cdot \text{Sen}\,37° = m\ a_{cp}$

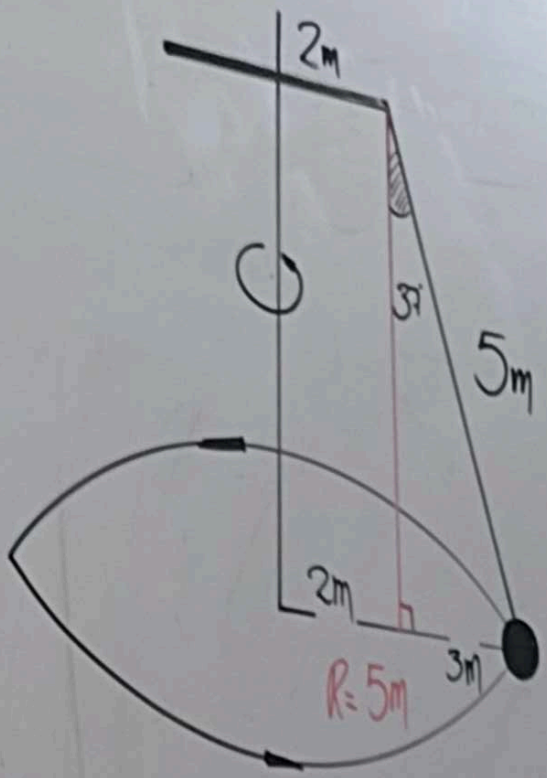
$$\frac{T \cdot \sin 37^\circ}{T \cdot \cos 37^\circ} = \frac{m\, a_{cp}}{m\, g}$$

$$g \cdot \operatorname{tg} 37^\circ = a_{cp}$$ ✓

$$10 \cdot \left(\frac{3}{4}\right) = \frac{V^2}{12}$$

$$V = 3\ m/s$$ ✓

(22)



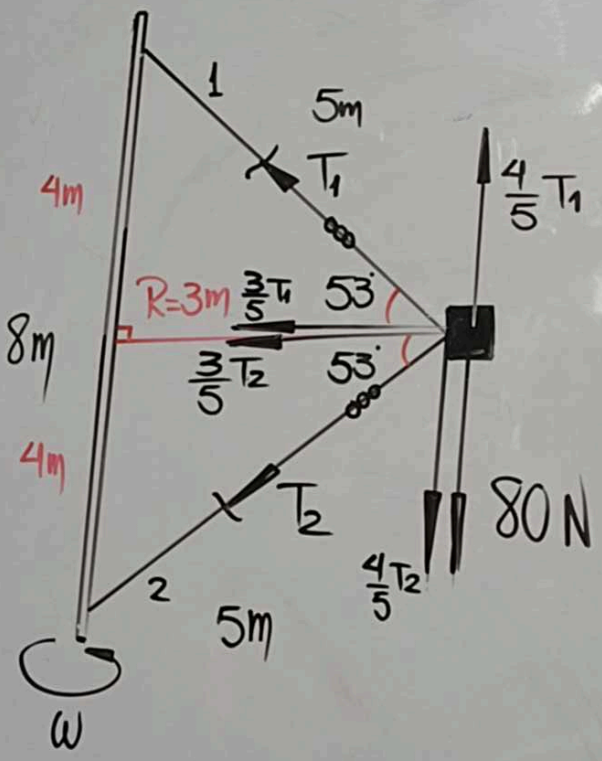
$$a_{cp} = g \cdot \operatorname{tg} 37^\circ$$

$$(9{,}8)\left(\frac{3}{4}\right)$$

$$a_{cp} = 7{,}35\ m/s^2$$

DINÂMICA CIRCULAR.

(23).



$\frac{4}{5}T_1 = \frac{4}{5}T_2 + 80$

$T_1 = T_2 + 100N$

$F_{cp} = m\,a_{cp}$

$\frac{3}{5}(T_1 + T_2) = 8.(\omega^2 R)$

$\frac{3}{5}(2T_2 + 100) = 8.4^2.\frac{3}{4}$

$T_2 + 50 = 320$

$T_2 = 270\,N$!

80

N

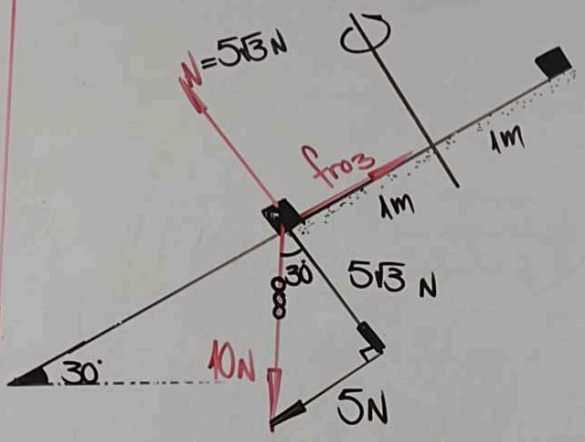
$(\omega^2 R)$

$4^2 \cdot 3$

320

0 N !

(29).



*) $\underbrace{F_{cp}}_{fro_3 - 5} = m \cdot a_{cp}$

$fro_3 - 5 = 1 \cdot \omega^2 R$

$\mu N - 5 = \omega^2 \cdot 1$

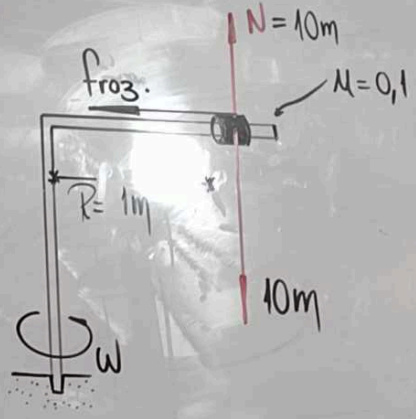
$\frac{\sqrt{3}}{2}(5\sqrt{3}) - 5 = \omega^2$

$\omega^2 = \frac{5}{2}$

$\omega = \frac{\sqrt{5}}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$

$\omega = \frac{\sqrt{10}}{2}$ rad/s

(36).



*) $\underbrace{F_{cp}} = m \cdot a_{cp}$

$fro_3 = m \cdot \omega^2 R$

$\mu N = m \cdot \omega^2$

$\left(\frac{1}{10}\right)(10m) = m\omega^2$

$\omega = 1$ rad/s