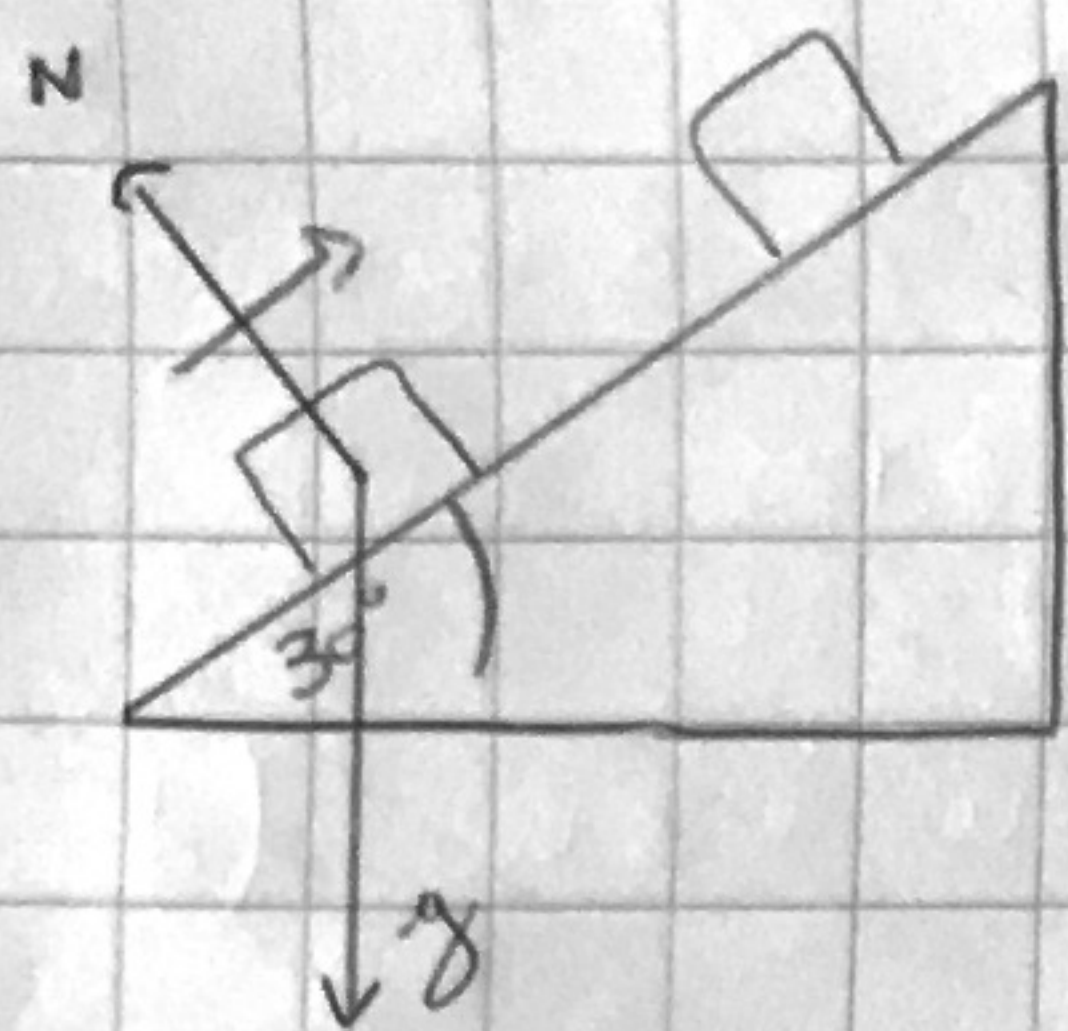


Problema 1

$$v_i = 8,00 \text{ m/s}$$

$$d = 3\text{m}$$



$$\frac{v_o^2}{2(\text{Dist})} = \frac{(8 \text{ m/s})^2}{2 \cdot 3 \text{ m}} = \frac{64 \text{ m/s}}{6 \text{ m}} = \frac{\text{Aceleración}}{1} = (-10,66 \text{ m/s}^2)$$

$$f_N = m \cdot g \cdot \cos 30^\circ \quad \text{fuerza normal}$$

$$N = 5 \cdot 10 \cdot 0,866 = \boxed{43,3 \text{ N}}$$

ENCONTRO

$$(-) f_n = \text{masa} \cdot \text{Gravedad} \cdot \sin \alpha = m \cdot A$$

$$-f_n = 5 \cdot 10 \cdot \sin 30^\circ = 5 \cdot -10,66 \text{ m/s}^2$$

$$f_n = -53,35 + 25$$

$$\underline{f_n = 28,35}$$

$$f_n = M \cdot N$$

$$M = \frac{f_n}{N} = \frac{28,35}{43,3}$$

$$\boxed{\mu = 0,65}$$

$$\boxed{\text{fuerza roce} = 0,65}$$

Problema 3. $R_1 = 10 \text{ cm}$ $R_2 = 4 \text{ cm}$ $R_3 = 40 \text{ cm}$ $\omega_3 = \omega_2$

a) $N^\circ \text{ de vueltas} = \frac{\text{Distancia recorrida}}{\text{Perímetro de rueda}} \rightarrow N^\circ \text{ de vueltas} = \frac{314 \text{ m}}{2,51 \text{ m}} = \boxed{125 \text{ vueltas}}$

Perímetro de la rueda = $2\pi \cdot R$

$\hookrightarrow 2\pi \cdot 40 \text{ cm} = 251,3 \text{ cm} \rightarrow \boxed{2,513 \text{ m}}$

Respuesta: La rueda dio 125 vueltas

b) $\omega_2 = \omega_3$ $\omega_3 = ?$ $V_3 = \text{Dist/Tiempo} \rightarrow V = 314 \text{ m} / 30 \text{ seg} = \boxed{10,46 \text{ m/s}}$

$\omega_{\text{rueda}} = 4,16 \text{ vueltas/segundo (rev/seg)} = \boxed{\bar{\omega} = \frac{26,1 \text{ RAD}}{1 \text{ segundo}}}$
 $\hookrightarrow 1497,6^\circ \cdot \text{seg} \rightarrow 26,1 \text{ RAD/seg}$

$\frac{1497,6}{\frac{180}{\pi}} = 26,1 \text{ RAD/seg}$

$\boxed{\bar{\omega} = 26,1 \text{ RAD/segundo}}$

c) $\omega_3 = \omega_2$ $V_2 = V_1$ $V = \omega \cdot R$

$\omega_2 = 26,1 \text{ RAD/seg} \rightarrow$

$V_1 = V_2 \rightarrow (\omega_1 \cdot R_1) = (\omega_2 \cdot R_2)$

$(\omega_1 \cdot 0,1) = (26,1 \cdot 0,04)$

$\omega_1 = \frac{(26,1 \cdot 0,04)}{0,1} = \boxed{10,44 \text{ RAD/seg}}$

Respuesta: ω_1 (ω Disco del Pedal) = $(10,44 \text{ RAD/seg})$

Cabezas