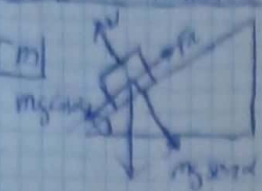
OLWG TRABAJO

[m]



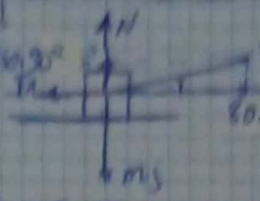
$F_R = \mu N = \mu mg\cos\alpha$

$W = -\mu mg\cos\alpha \cdot r$

$W = -0,32 \cdot 3 \cdot 9,8 \cdot \cos 45° \cdot 5$

$W = -33,162\ J$

[c]



80N, 10Kg, $\mu = 0,15$, $r = 2m$

CÁLCULO FNETA

EJEX

$80\cos 30° - F_R = F_{NETA}$

$69,28 - \mu N = F_{NETA}$

$69,28 - 0,15 \cdot 58 = F_{NETA}$

$F = 60,58N$

$W = Fr = 60,58 \cdot 2 = 121,16\ J$

EJEY

$N + 80\sin 30° = mg$

$N = mg - 80\sin 30°$

$N = 58N$

[u]

15N

$W = F \cdot r \cos\alpha$

$W = 15 \cdot 10 \cdot 25 = 1537,5\ J$

$t = 10s$ → CÁLCULO DE r

$x_F = x_0 + v_0 t + \frac{1}{2} a t^2$

$x_F = 0 + 2,5 \cdot 10 + \frac{1}{2} 20 \cdot 10^2$

$x_F = 1025m$

CÁLCULO DE a

$F = m \cdot a$

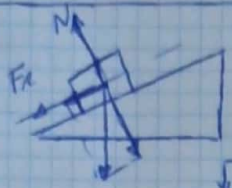
$a = \frac{15}{0,75} = 20 m/s^2$

$F_R = \mu N = \mu mg\cos\alpha$

$F_R = 0,2 \cdot 0,1 \cdot 9,8 \cdot \cos 30°$

$F_R = 0,169\ N$

[r]



$W_{F_R} = -F_R \cdot r = -0,169 \cdot 2,197$

$W_{F_R} = -0,371\ J$

CÁLCULO DE r

$x_F = x_0 + v_0 t + \frac{1}{2} a t^2$

$x_F = 0 + 5 \cdot 0,879 - \frac{1}{2} 5,69 \cdot 0,879^2$

$x_F = 4,395 - 2,198$

$x_F = 2,197m$

CÁLCULO a

EJEX

$0 - mg\sin\alpha - F_R = ma$

$-mg\sin\alpha - \mu mg\cos\alpha = ma$

$a = -g\sin\alpha - \mu g\cos\alpha$

$a = -4,9 - 1,69 = -5,69 m/s^2$

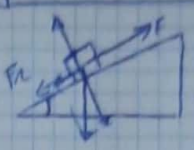
TIEMPO QUE TARDA EN PARARSE

$V_F = V_0 + at$

$0 = 5 - 5,69 \cdot t$

$t = 0,879s$

[p]



CÁLCULO FNETA

EJEX

$F - mg\sin\alpha - F_R = F_T$

$F - mg\sin\alpha - \mu mg\cos\alpha = F_N$

$15 - 9,8 - 3,395 = F_N$

$F_N = 1,805N$

$W = F \cdot r = 1,805 \cdot 10 = 18,05\ J$

$\alpha = 30°$

$\mu = 0,2$

EJEY

$N - mg\cos\alpha = 0$

$N = mg\cos\alpha$

[d]

$F - mg = 0$

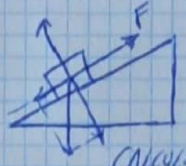
$F = mg$

$F = 500 \cdot 9,8 = 4900N$

$W = Fr = 4900 \cdot 30$

$W = 147000\ J$

[a]



$W = F \cdot r \cos\beta = 14,7 \cdot 3 = 44,1\ J$

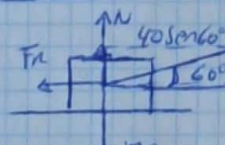
CÁLCULO DE F

EJEX

$F - mg\sin\alpha = \phi$

$F = mg\sin\alpha = 3 \cdot 9,8 \cdot \sin 30° = 14,7N$

[c]



$\mu = 0,15$

$40\sin 60°$, $40N$, $40\cos 60°$

CÁLCULO DE LA FNETA

EJEX

$40\cos 60° - F_R = ma$

$40 \cdot \cos 60° - \mu N = 12a$

$20 - 0,15 \cdot 82,959 = 12a$

$F = 7,556N$

EJEY

$N + 40\sin 60° - mg = 0$

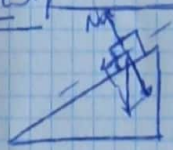
$N = mg - 40\sin 60°$

$N = 129,8 - 40\sin 60°$

$N = 82,959N$

$W = Fr = 7,556 \cdot 40 = 302,24\ J$

[s]



CÁLCULO F_R

$F_R = \mu N$

EJEY

$N - mg\cos\alpha = 0$

$N = mg\cos\alpha$

$F_R = \mu mg\cos\alpha$

$F_R = 0,2 \cdot 3 \cdot 9,8 \cdot \cos 30° = 5,092N$

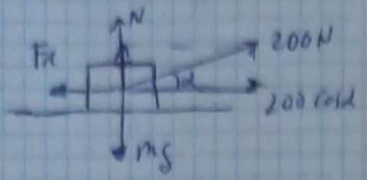
$W_{F_R} = -F_R \cdot r = -5,092 \cdot 3 = -15,276\ J$

[D]

20 kg

$\alpha = 37°$

$\mu = 0,1$



Calculo F sobre el cuerpo

EJE X

$200\cos\alpha - Fr = F_{neta}$

EJE Y

$N + 200\,\text{sen}\,\alpha - mg = 0$

$N = mg - 200\,\text{sen}\,\alpha$

$200\cos\alpha - \mu mg + \mu 200\,\text{sen}\,\alpha = F$

$159,727 - 19,6 + 12 = F$

$F = 152,127\ N$

$W = F r \cos\alpha = 152,127 \cdot 10 = 1521,27\ J$