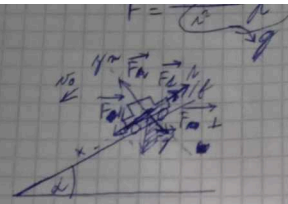
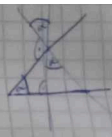


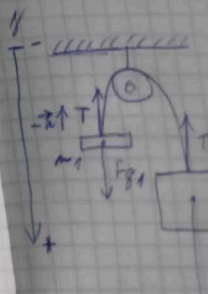
## F5 - Příklady na dynamiku

$N_0 = 72 \text{ kN} = 20 \text{ m/s}$   
 $f = 0,2$   
 $\alpha = 10^\circ$

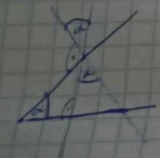
$F_{\perp} = F_g \cdot \cos \alpha$        $F_g = m \cdot g$   
 $F_{\parallel} = F_g \cdot \sin \alpha$   
 $F_f = F_{\perp} \cdot f$

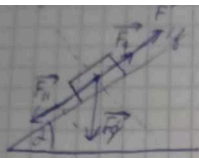
PR:  $\vec{F}_{\parallel} + \vec{F}_f = m \cdot \vec{a}$        $\text{přesně v } x$   
 $F_{\parallel} - F_f = m \cdot a$   
 $F_g \cdot \sin \alpha - F_g \cdot \cos \alpha \cdot f = m \cdot a$



$m \cdot g \cdot (\sin \alpha - f \cos \alpha) = m \cdot a$   
 $a = g \cdot (\sin \alpha - f \cos \alpha)$        $\alpha \approx -0,23$

Kinematic:  $s = v_0 t + \frac{1}{2} a t^2$   
 $v = v_0 + a t$   
 $0 = v_0 + a t \rightarrow t = -\frac{v_0}{a}$   
 $s = v_0 t + \frac{1}{2} a t^2$   
 $0 = v_0 \left(-\frac{v_0}{a}\right) + \frac{1}{2} a \left(-\frac{v_0}{a}\right)^2$   
 $0 = -\frac{v_0^2}{a} + \frac{v_0^2}{2a}$   
 $0 = -\frac{v_0^2}{2a}$   
 $a = -\frac{v_0^2}{2s}$   
 $a = -\frac{v_0^2}{2g(\sin \alpha - f \cos \alpha)}$   
 $a = -\frac{40^2}{2 \cdot (-0,23)} \text{ m}$   
 $a = \frac{210}{0,23} = 870 \text{ m}$





~~100%~~

D:  $\alpha = 30^\circ$

$f = 0,2$

$m = 10 \text{ kg}$

$$\vec{F}_N + \vec{F}_A + \vec{F} = 0$$

$$F_N - F_A - F = 0$$

$$F_N - F_A = F$$

$$F = m \cdot g (\sin \alpha - f \cos \alpha)$$

$$F \hat{=} 32 \text{ N}$$

E<sub>g</sub> - def

ZZHE

- platt sein

ZZH

D: