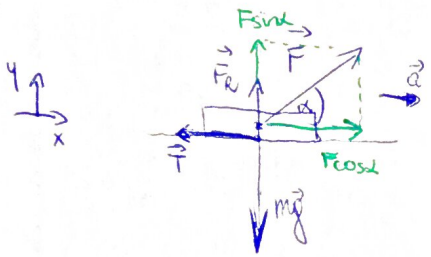
5.10R kwiecień

a)



Ox: $ma = F\cos\alpha - T$

Oy: $0 = F\sin\alpha + F_R - mg$

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

$T = \mu F_R = \mu(mg - F\sin\alpha)$

$ma = F\cos\alpha - \mu(mg - F\sin\alpha)$

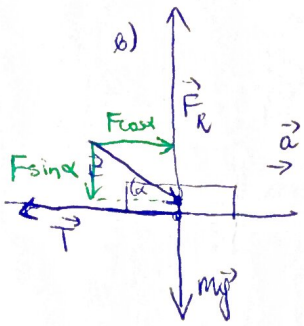
$ma = F\cos\alpha - \mu mg + \mu F\sin\alpha$

$a = \dfrac{F\cos\alpha - \mu mg + \mu F\sin\alpha}{m}$

$a = \dfrac{F}{m}(\cos\alpha + \mu\sin\alpha) - \mu g$

(2)

b)



Ox: $ma = F\cos\alpha - T$

Oy: $0 = F_R - F\sin\alpha - mg$

$\Rightarrow F_R = F\sin\alpha + mg$

$T = \mu F_R = \mu(F\sin\alpha + mg)$

$ma = F\cos\alpha - \mu(F\sin\alpha + mg)$

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

$a = \dfrac{F}{m}(\cos\alpha - \mu\sin\alpha) - \mu g$

b) Widzimy, że przyspieszenie w przypadku a jest mniejsze, gdyż tarcie jest większe.