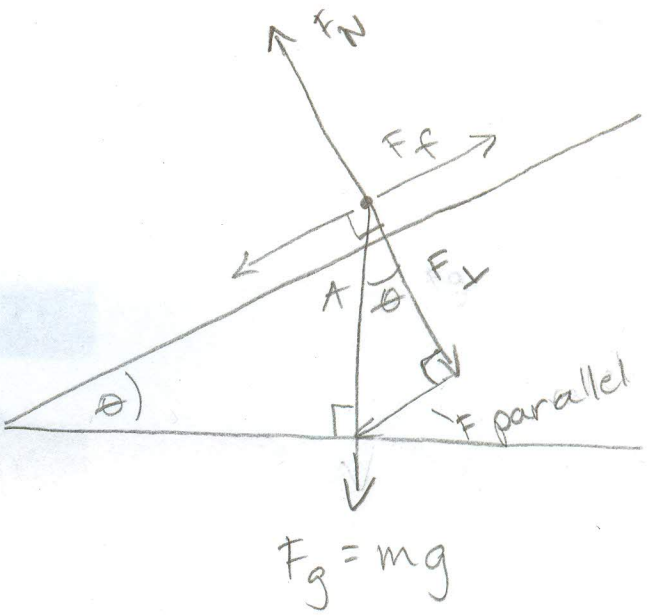
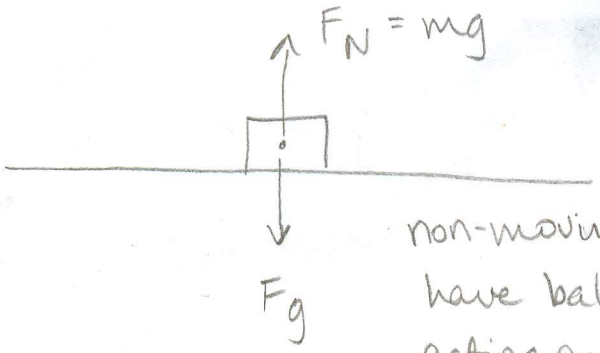
Force of Friction (F_{fs} - static ; F_{fk} - kinetic)

$F_{fs} = \mu_s F_N$; $\mu_s = \frac{F_{fs}}{F_N}$





non-moving obj have balanced forces acting on it.

$F_N = F_g$

$\sin\theta = \frac{F_{\parallel}}{F_g}$

$F_{\parallel} = m(g)(\sin\theta)$

F_f → also known (F_y)

$\cos\theta = \frac{F_\perp}{F_g}$

$F_N \rightarrow F_\perp = m(g)(\cos\theta)$

F_N → also known (F_x)

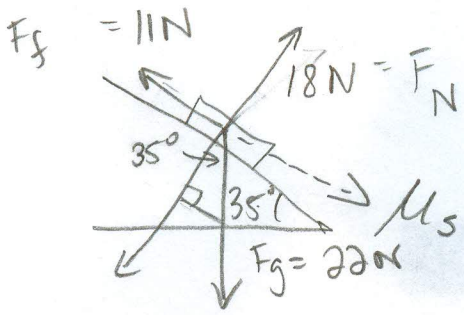
$F_f = \mu_s F_N$; $\mu_s = \frac{F_{fs}}{F_N}$

Balanced Forces

$\mu_s = \frac{F_{\parallel}}{F_\perp} = \frac{m(g)\sin\theta}{m(g)\cos\theta} = \frac{o/h}{a/h} =$

$\mu_s = o/a = \tan\theta$

Sample Problem 4a



$\mu_s = \tan\theta = \frac{O}{a}$

$\tan 35 = \frac{O}{18}$

$O = 13\,N$

$\Sigma F_x = 13N - 11N = 2N$