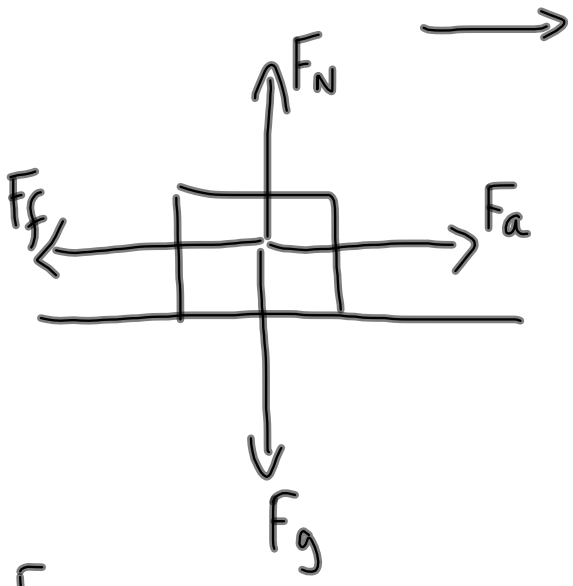
Friction

FBD
(Free Body Diagram)



Vertically: $F_N = F_g$

horizontally: $F_a = F_{f(static)}$ (at the instant the object begins to move)

$F_a = F_{f(kinetic)}$ (constant velocity)

$F_f = \mu F_N$ (depends on the nature of the surfaces (μ) and F_N)

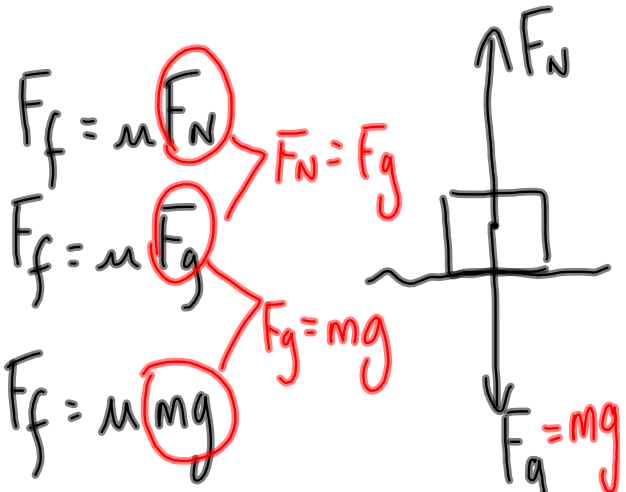
MP 141

$m = 2.00 \times 10^2 \text{ kg}$

Rubber on wet concrete

$\mu_s = 0.70$

$F_f = ?$



$F_f = (0.70)(2.00 \times 10^2 \text{ kg})(9.81 \text{ m/s}^2)$

$F_f = 1.4 \times 10^3 \text{ N}$

The increase in the force of static friction due to the addition of sandbags.

MP|143

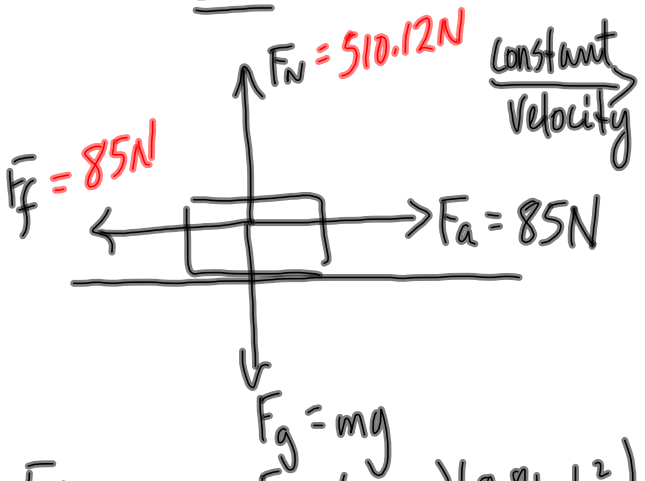
$F_a = 85N$

$m = 52kg$

constant velocity

$\mu = ?$

DRAW A FBD!



$F_f = \mu F_N$

$\mu = \frac{F_f}{F_N}$

$\mu = \frac{85N}{510.12N}$

$\mu \doteq 0.17$

kinetic coefficient of friction

TO DO

① PP|144

② POPPER PHYSICS

- find the mean "pop height" for the class
- find the velocity when the popper left the floor ($v_1 = ?$)

$V_2 = 0$

$\Delta d =$ measured

$a = -9.81 m/s^2$