

Friction - Static

$$f < \mu N$$

- kinetic or sliding

$$f = \mu N$$

↑ normal force
@ surface

transverse
or
parallel
force "
friction

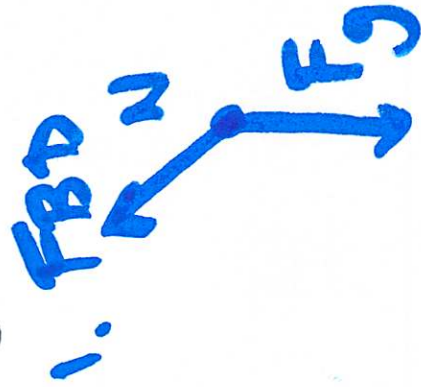
coefficient
of
friction

"Newton's laws ..."

"Applying Newton's laws"

"friction" "centripetal force"

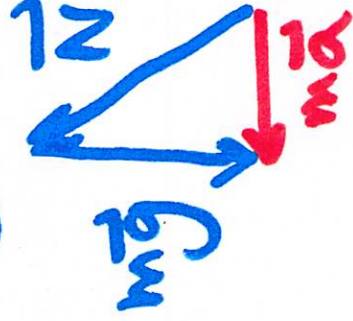
"gravitational force" or "weight".

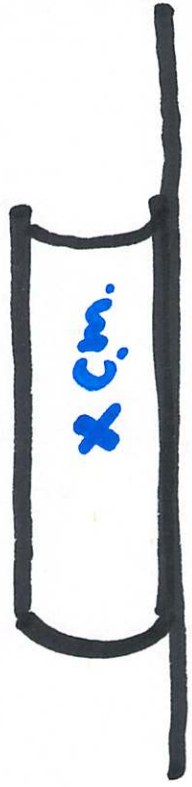


2. acceleration
knowledge

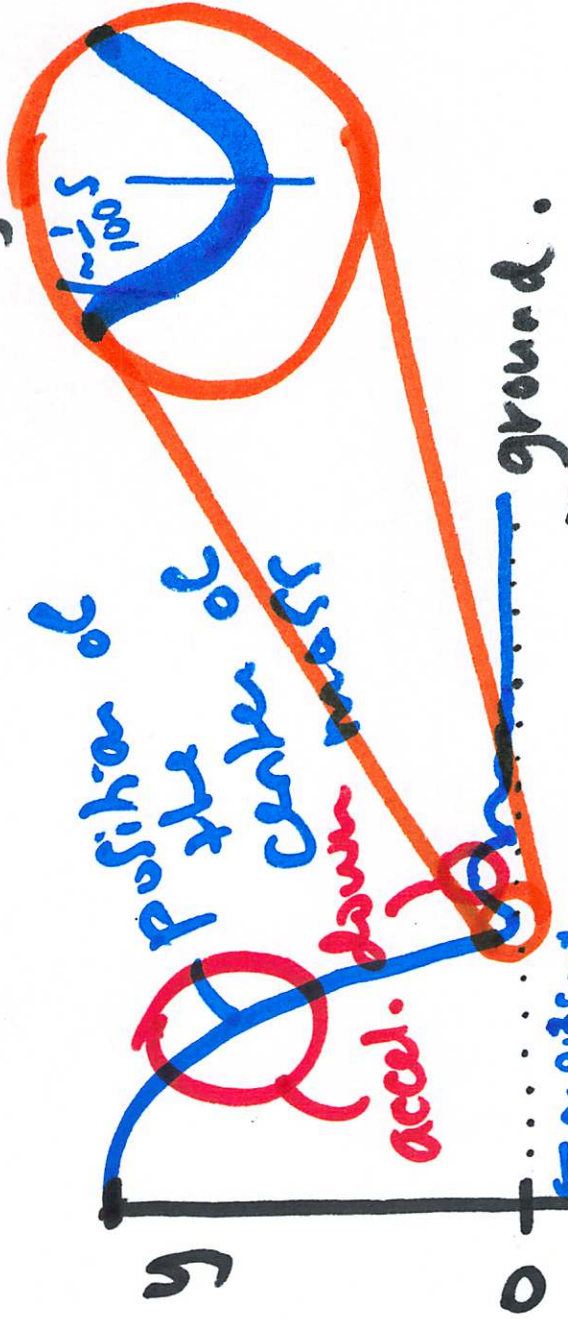


3. compute
 $\Sigma \vec{F} = m \cdot \vec{a}$

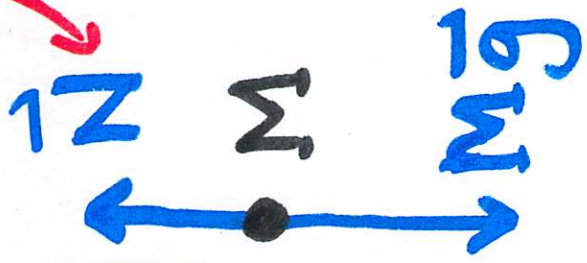




Stage



bigger?
smaller?
smaller?
than Mg ?

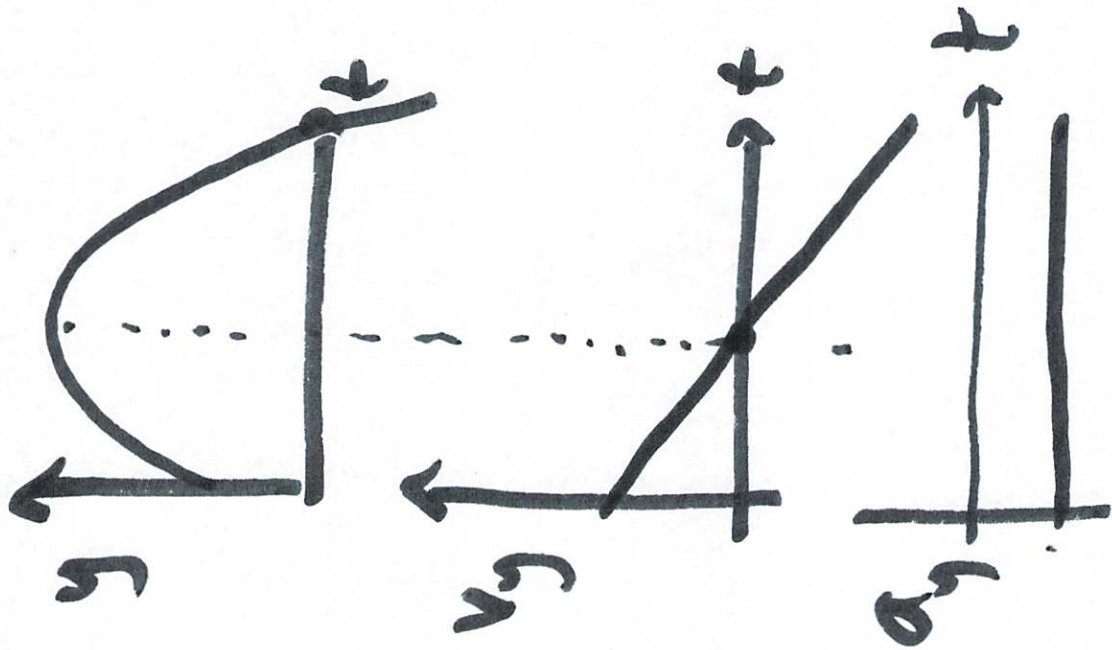
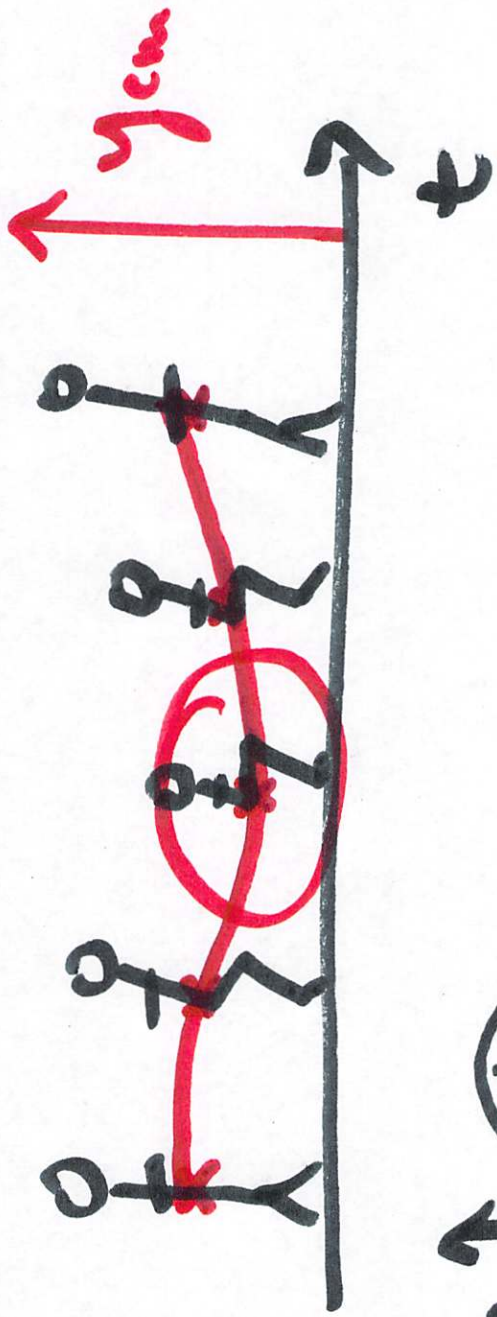


ground.

$\vec{F} = m\vec{a}$ total mass of the object

$\vec{F} = m\vec{a}$

total force on object
acceleration of the center of mass



If you change your velocity
rapidly (or in a short time),

you must have:

- a large acceleration $|\vec{a}|$

- large forces acting