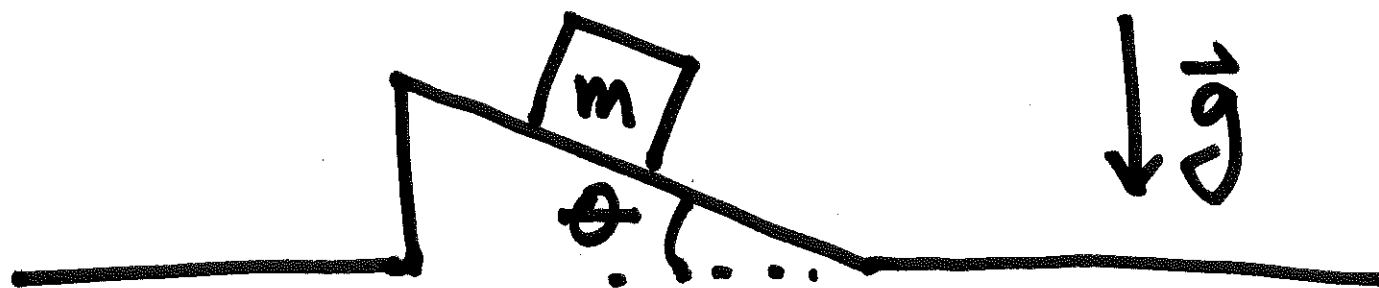


# Physics 1

2017-09-19.

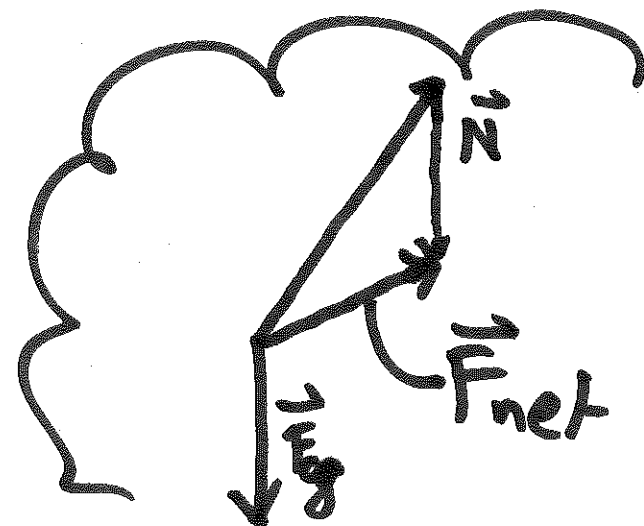
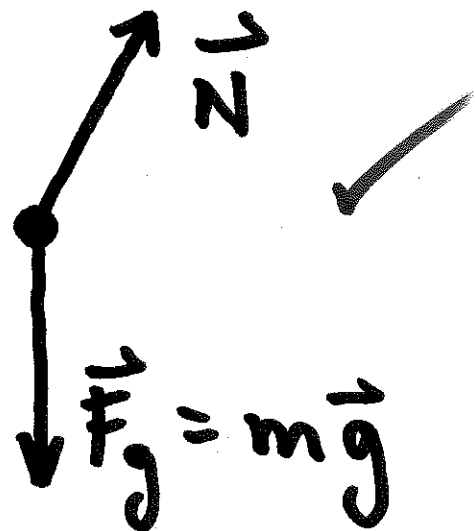
- Agenda:
- Questions.
  - Reading.
  - Scope of Term Exam 1.
  - Block on a plane.
- Newton's Laws  
free-body diagram  
~~dynamics~~



- no air. - no friction. - release from rest  
 what is the acceleration  $\vec{a}$  of the block?

guess:  $|\vec{a}| = |\vec{g}| \sin \theta$

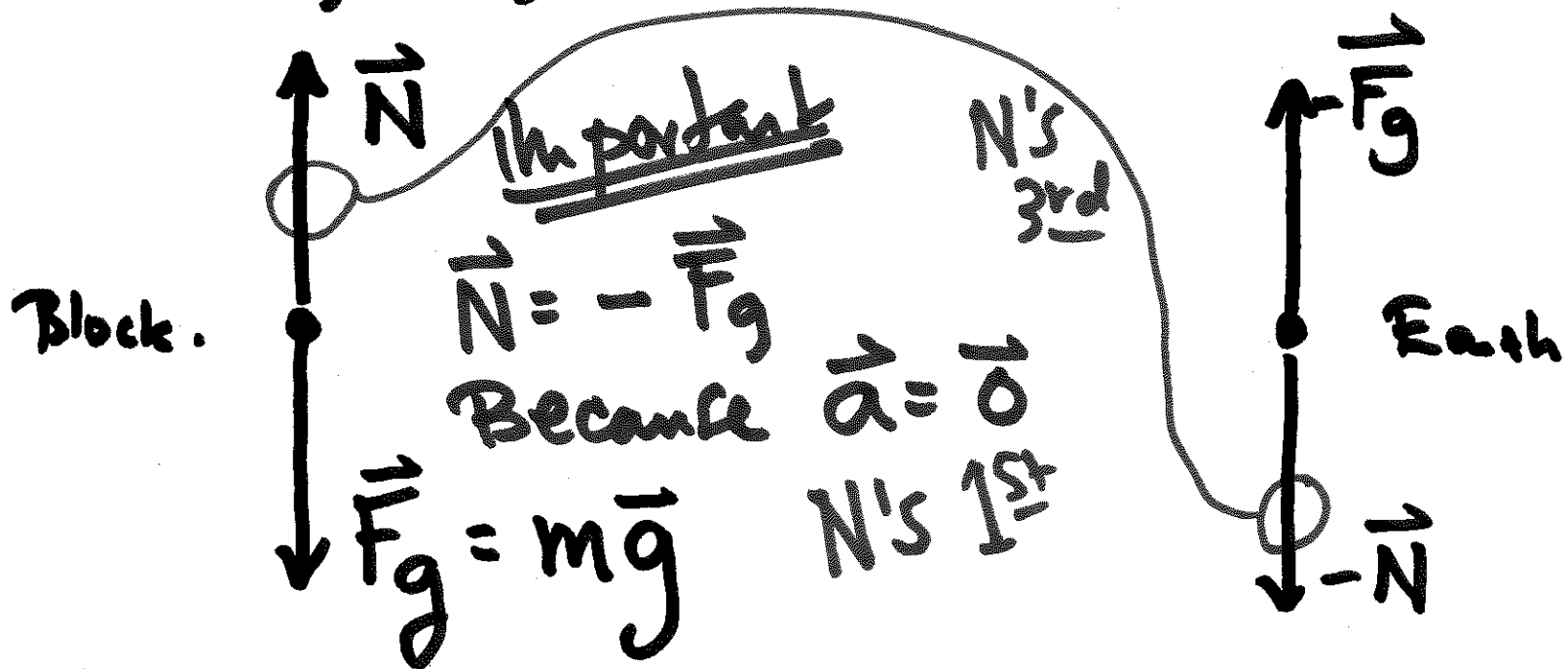
"frictionless" surfaces produce only normal  $F_s$ .





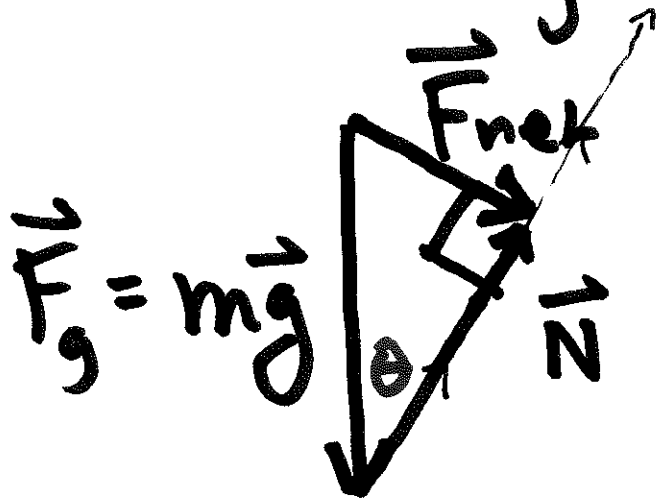
- no air
- no friction
- r.f.r.
- floor's not accelerating.

free-body diagram.



What is the "net" force? total Force

$$\vec{F}_{\text{net}} = \vec{F}_g + \vec{N} \quad \text{vector equation!}$$



Important: to draw this diagram - we needed to use:  $\vec{F}_{\text{net}} \parallel \vec{a} \parallel \text{surface}$

Interplay between forces + kinematics