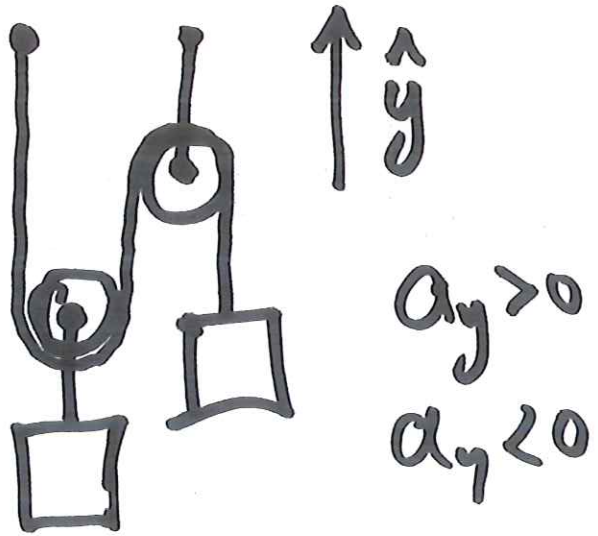
NYU Physics I — 2016-09-27

Agenda: — Reading: - Newton's Laws
- applications of N's Laws.
- Kinetic & Potential energy.

— Exam 1 results.

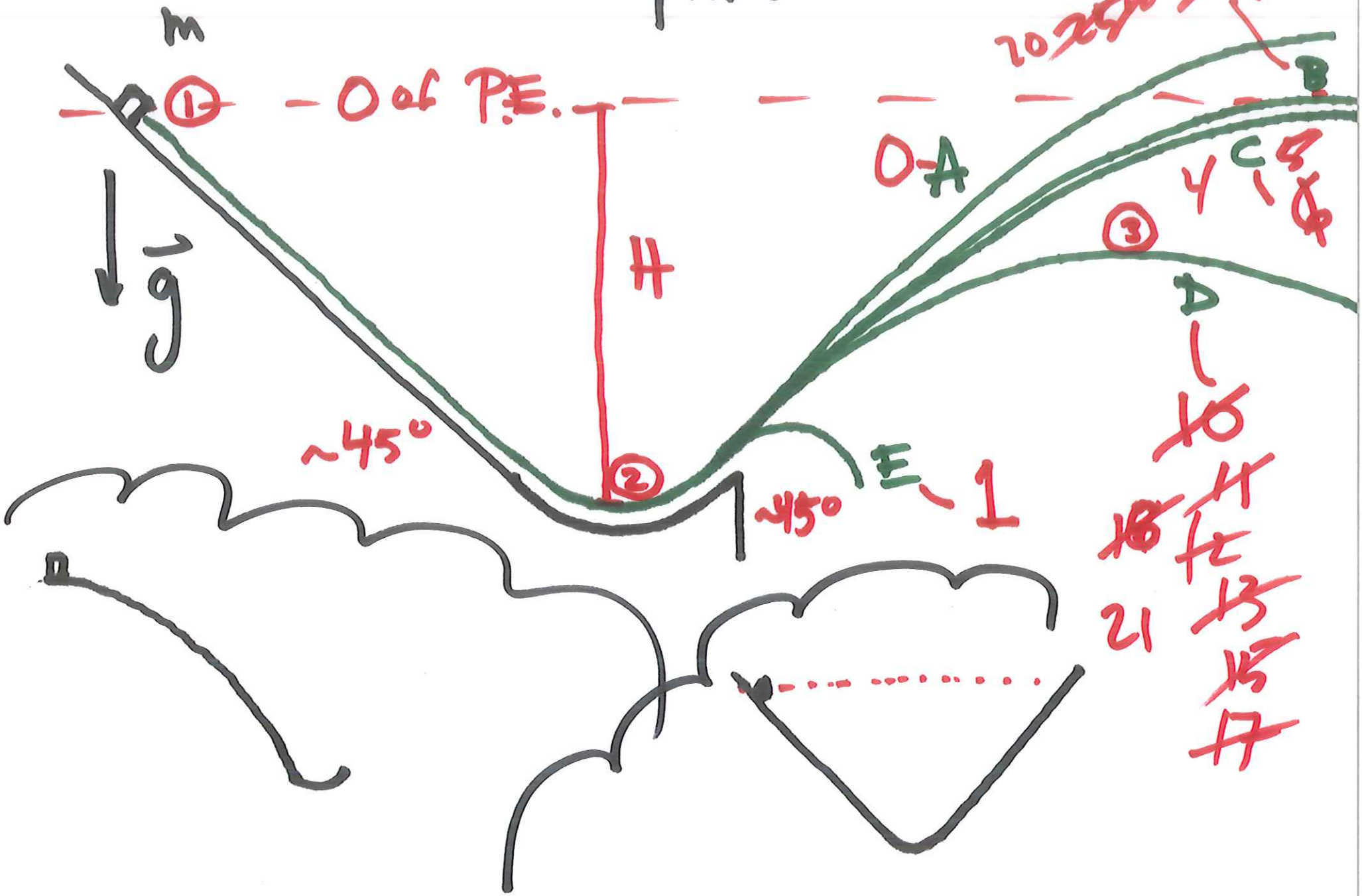
— "Ski Jump" problem

— Qs.

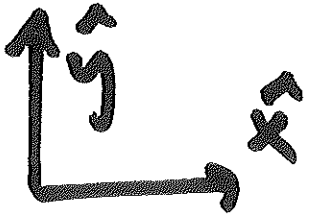



$\vec{g}$
m
Reibung
g
"physikalisch"
land
art, show, etc.
$E^2 = m^2c^4 + p^2c^2$

In physics land — ignore air
— ignore friction.



"conserved" ≠ "invariant"



V_x is an invariant on the parabolic trajectory.

Conserved: energy, momentum, charge.

time symmetry — translation symmetry — Noether

Noether "Time & chance" by Albert

angular momentum

- baryon number
- matter-antimatter asymmetry
- lepton number (information)

$KE_1 = 0$ $\qquad$ $PE_1 = 0$

$KE_2 = \frac{1}{2}mv^2$ $\qquad$ $PE_2 = -mgH$