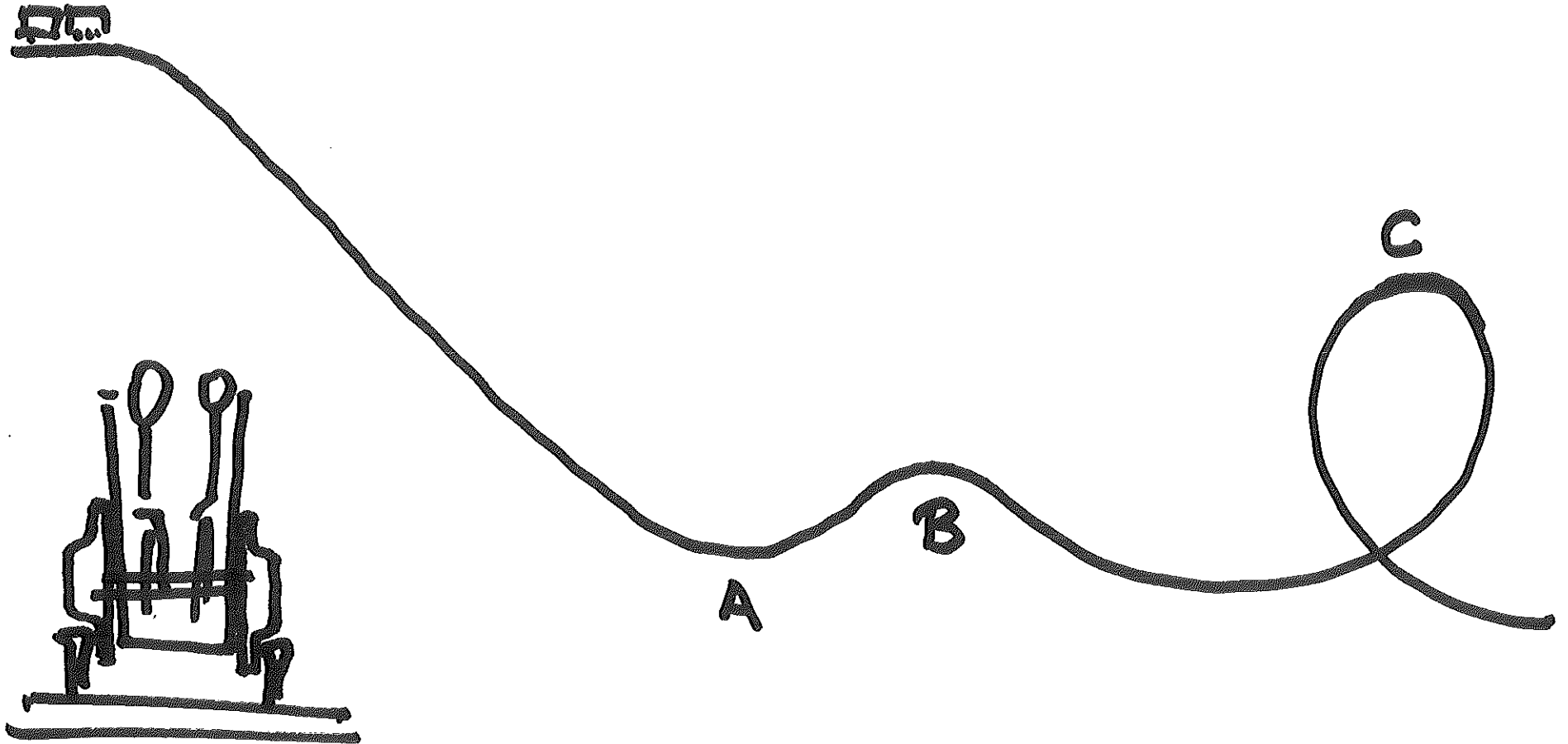# Physics 1

2017-09-28.

Agenda — Questions.

— How to think about this!

— R.C.D.S.

What is the #1 rule of R.C.D.S.?

A

B

C

B_1

B_2

B_3

effective Radius of curvature.

$\vec{a}$

R

v

v

v

N

N

N

B_1

B_2

B_3

mg

mg

mg

@ B2:

$\vec{N}$

$\downarrow y$

$\uparrow$ $mg\vec{j}$
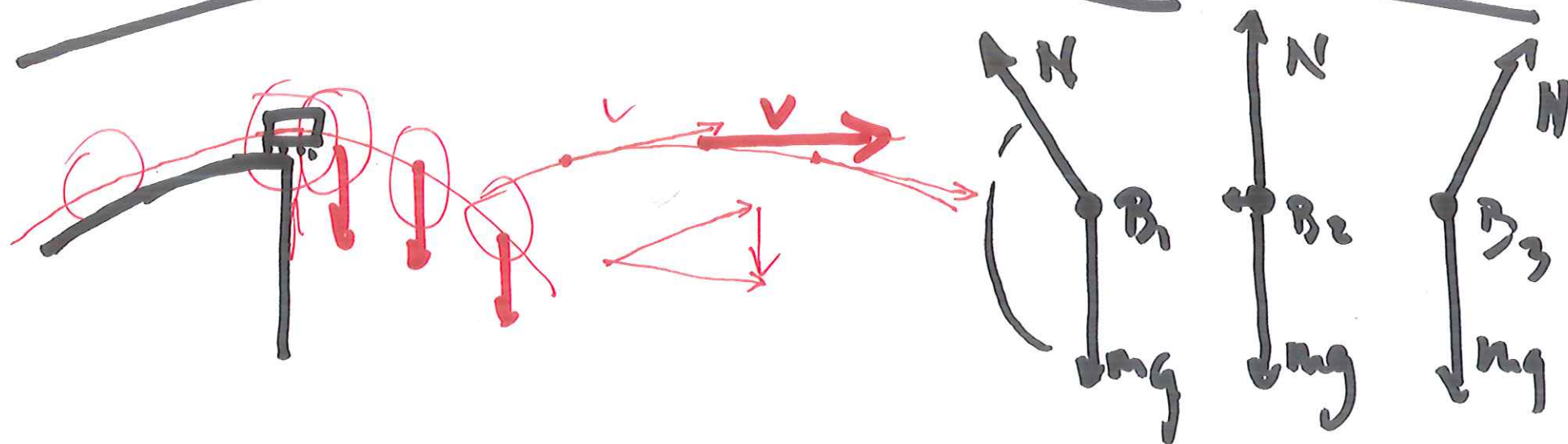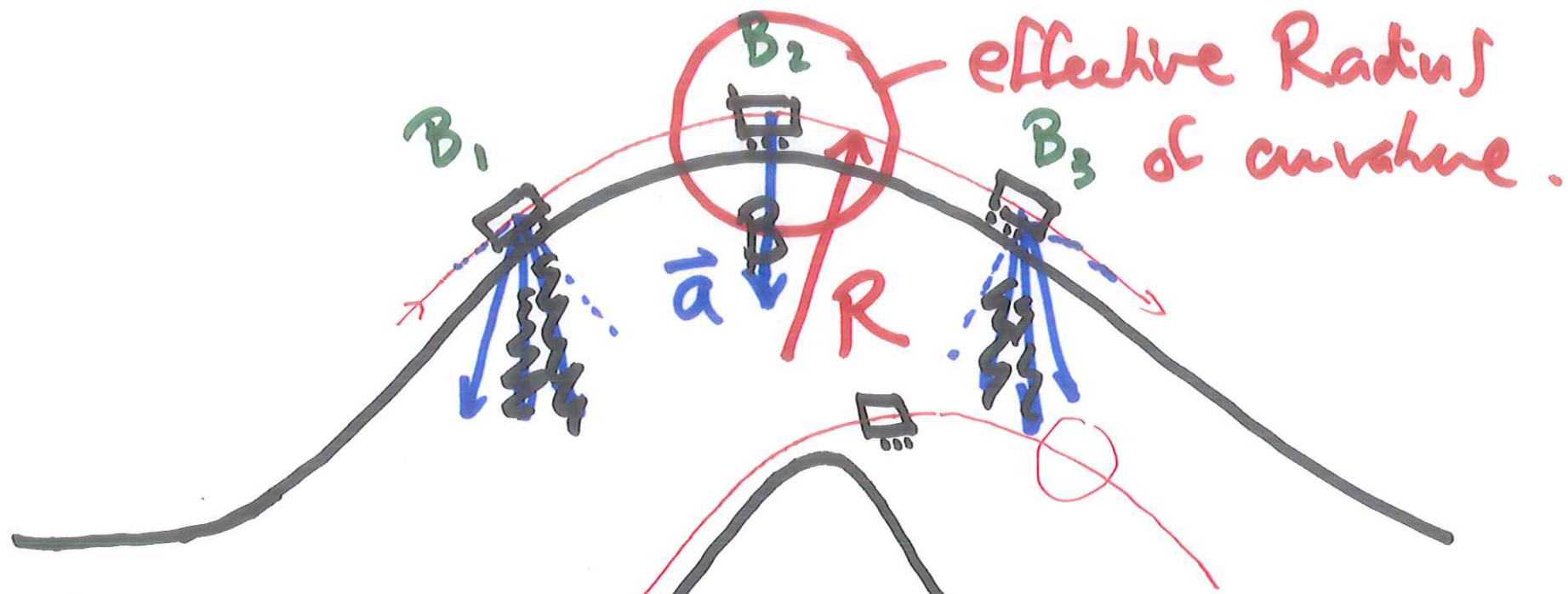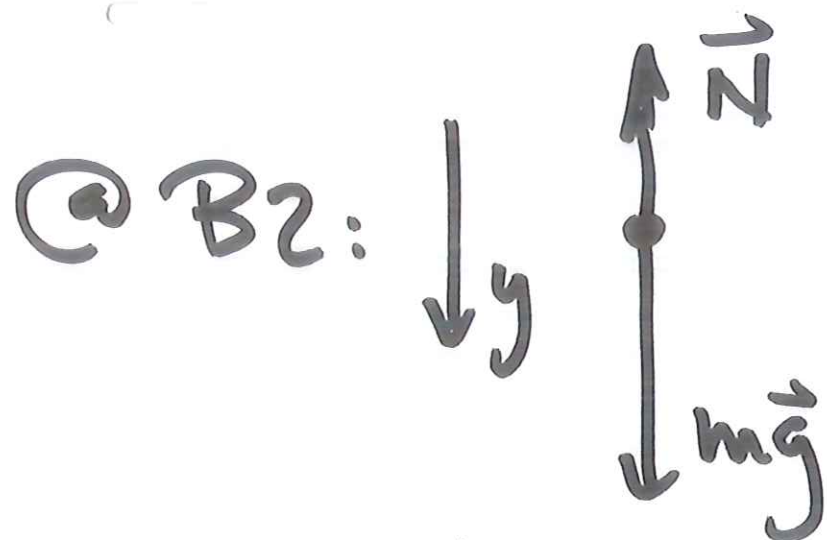
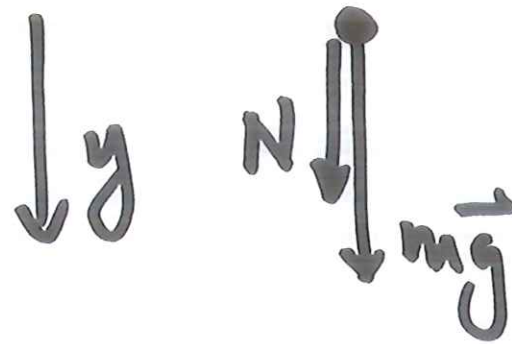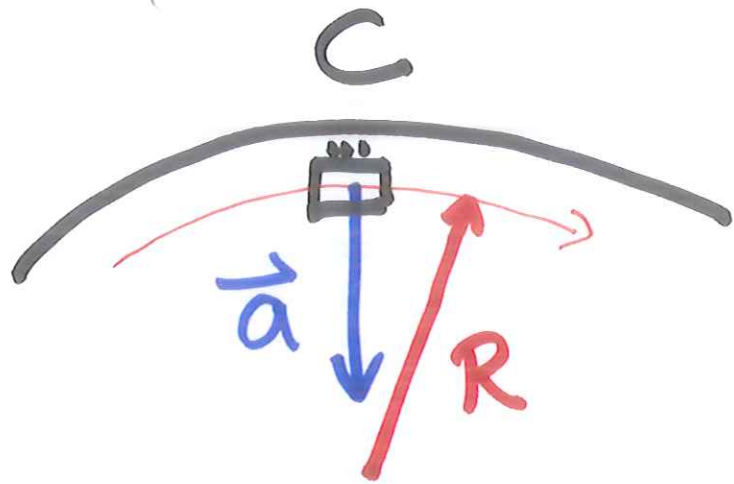$\downarrow |\vec{a}| = \dfrac{v^2}{R}$

$mg - |\vec{N}| = \dfrac{mv^2}{R}$

~~$\vec{N} = \dfrac{mv^2}{R} - mg$~~

$$\boxed{N = mg - \dfrac{mv^2}{R}}$$

~~$v^2 > Rg$~~

if v^2 gets too large, $N < 0$

BAD!!

C

$\vec{a}$ R

$\downarrow y$ N $\updownarrow$ $\downarrow m\vec{g}$

$$mg + N = \frac{mv^2}{R}$$

$$\boxed{N = \frac{mv^2}{R} - mg}$$

$v^2 < Rg$ (crossed out)

If v^2 gets too small, N goes negative