

NYU Physics I

- Term Exam 2.
- RCDS redux...
- questions.
- Elastic collision.

2018-10-02

- momentum \vec{p}
- impulse $\Delta\vec{p}$
- collision
- "elastic"
- $\vec{F} = \frac{d\vec{p}}{dt}$

re-write:

#1 rule of R.C.D.S.

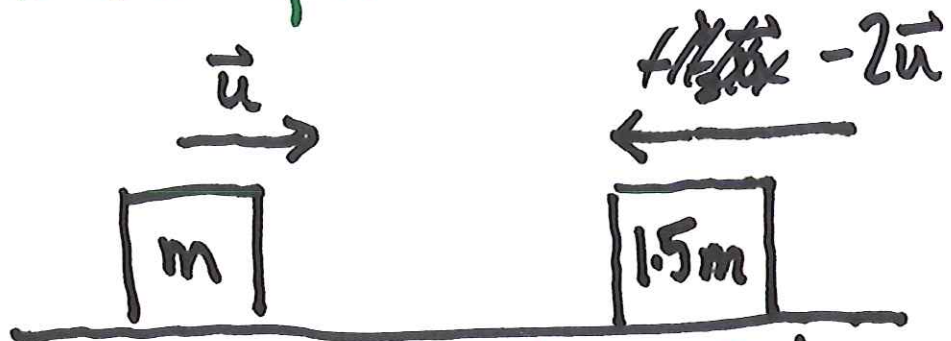
on the
cart

The normal force must

point from the rails

towards the cart.

before, lab.



$$\vec{p} = m\vec{u} - 3m\vec{u} = -2m\vec{u} \text{ air track}$$

$$KE = \frac{1}{2}mu^2 + \frac{1}{2}(1.5m)(4u^2) = \frac{7}{2}mu^2$$

after, lab

Momentum: $\vec{p} = \gamma m \vec{v}$

$$\gamma = \frac{1}{\sqrt{1 - \frac{v^2}{c^2}}}$$

c = speed of light

if $|\vec{v}| \ll c$, $\gamma \approx 1$

then $\vec{p} = m \vec{v}$

**MOMENTUM IS
A VECTOR**

(KE is a scalar!!)