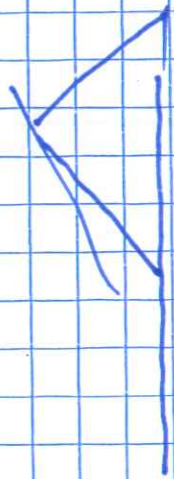


NYU Physics I

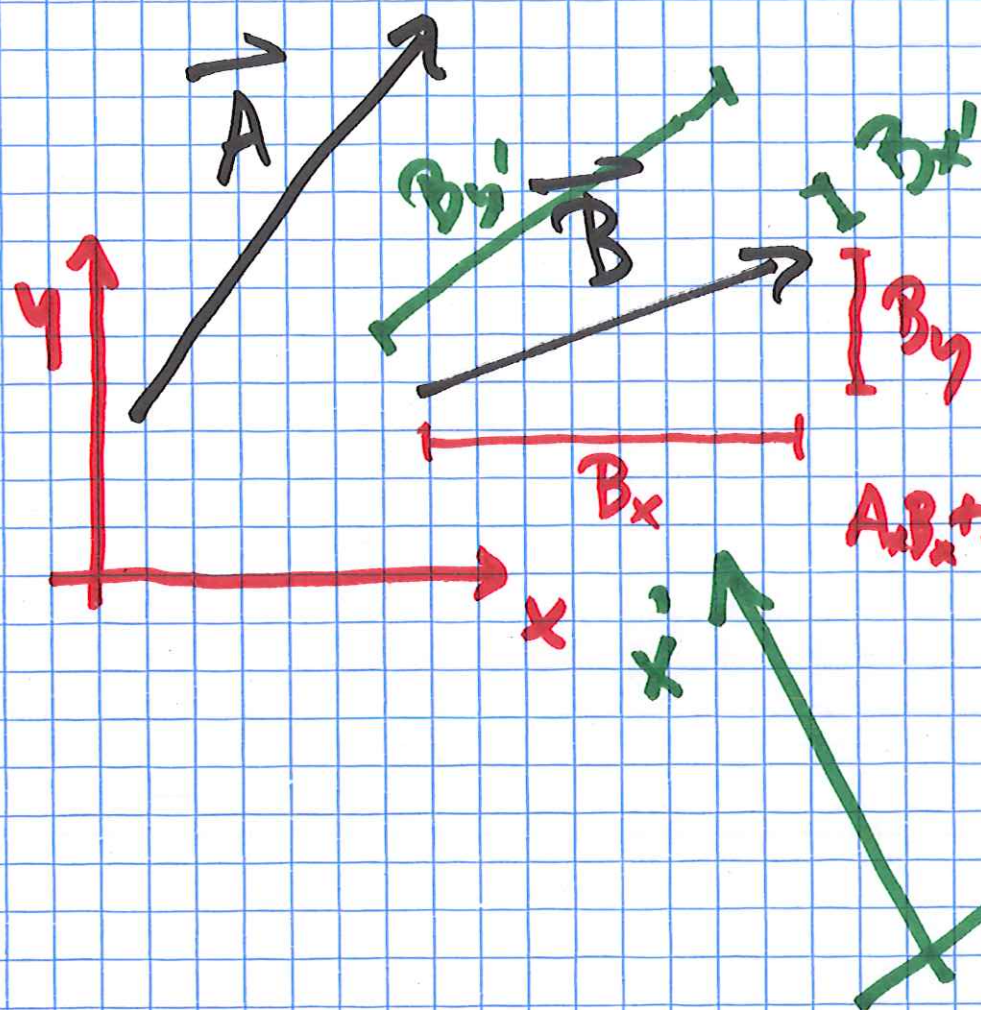
- Interval
- Twins
- Exam 6.



2018-12-06

- Chs 2, 3, 4.
- Interval.

3-space

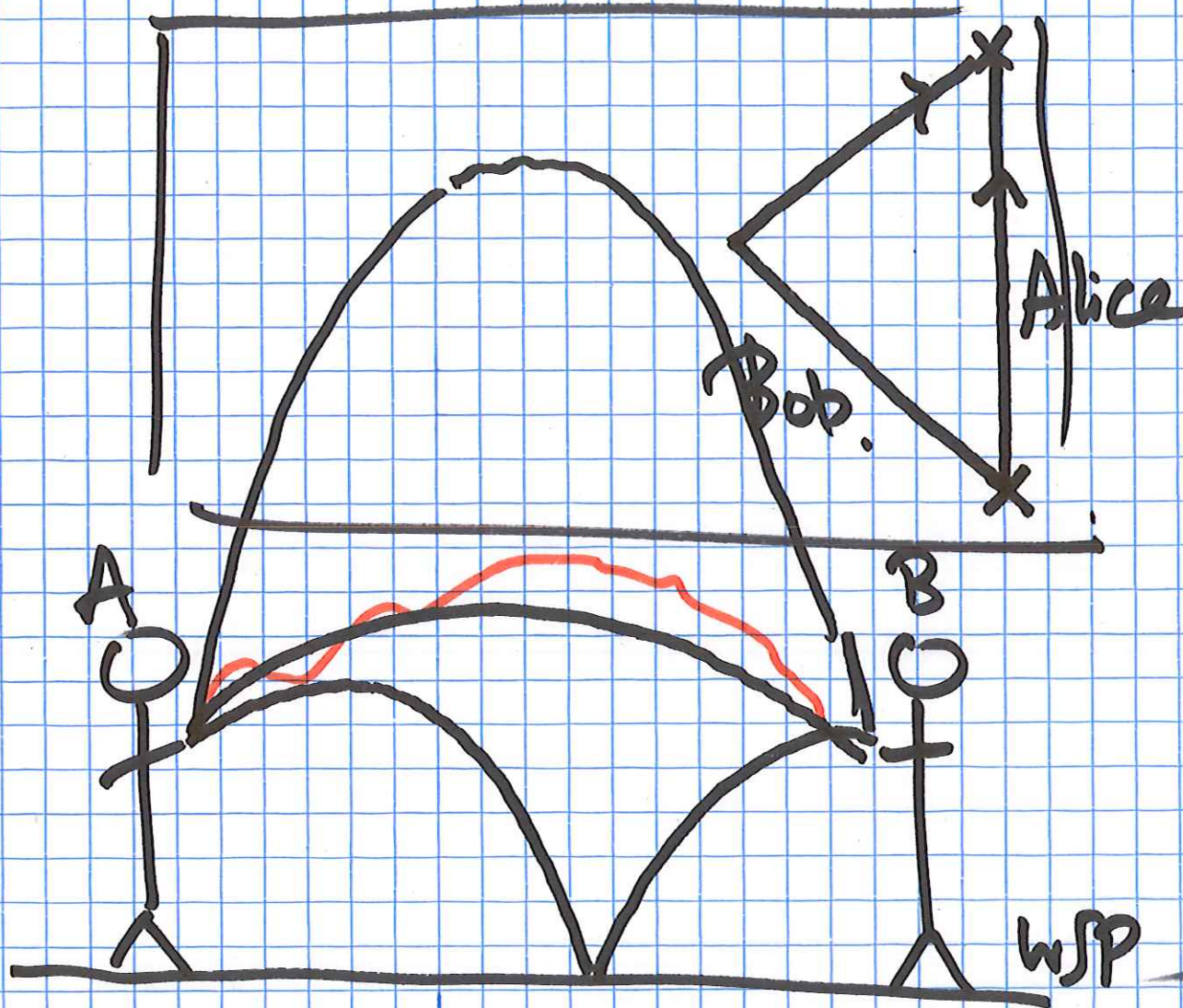


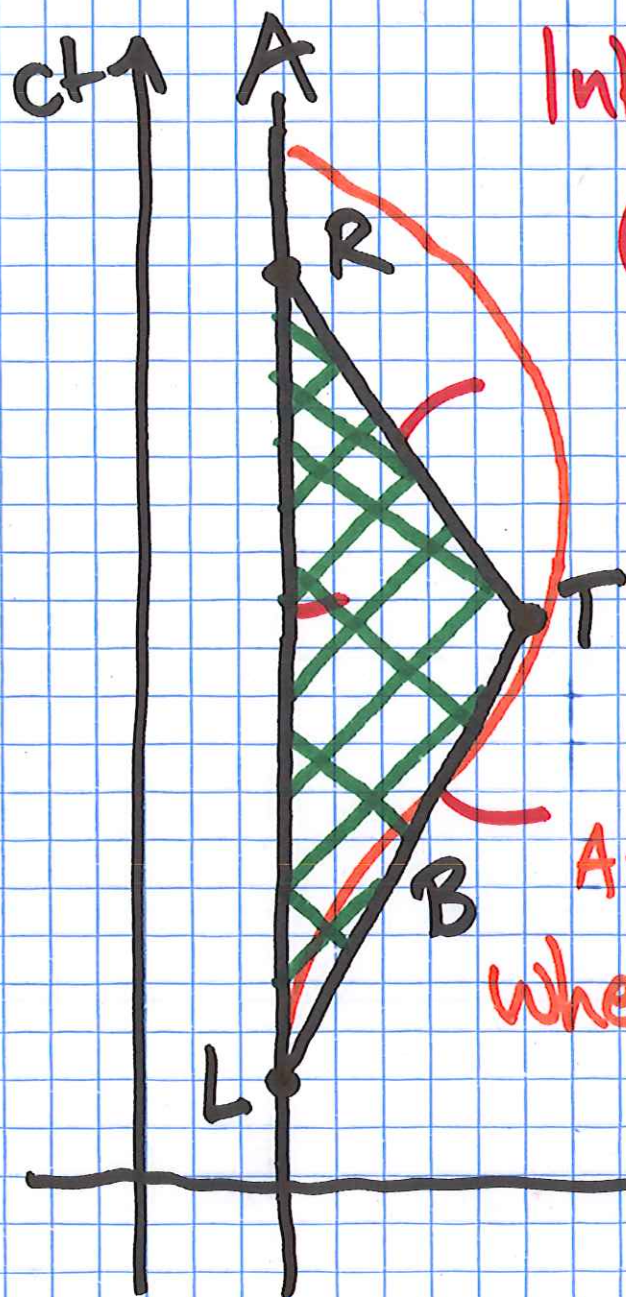
$$\vec{B} \cdot \vec{B} = \vec{B} \cdot \vec{B}$$

$$\vec{A} \cdot \vec{B} = \vec{A} \cdot \vec{B}$$

$$A_x B_x + A_y B_y + A_z B_z = A_x B_x + A_y B_y + A_z B_z$$

3-space.





Interval between 2 events

$$(\Delta s)^2 = (c\Delta t)^2 - (\Delta x)^2 - (\Delta y)^2 - (\Delta z)^2$$

$$= (c\Delta t)^2 - (\text{distance})^2$$

Interval is the same in
all frames.

A: $L \rightarrow R$ $(\Delta s)^2 = (c\Delta t_{LR})^2$

When $(\Delta s)^2 > 0$, $(\Delta s)^2 = (\text{proper time})^2$

proper time \equiv time elapsed for
the observer
for which L, R
are co-spatial

$$\sqrt{70} = 8.4$$

$$\sqrt{1-0.01} = 1 - \frac{1}{2} 0.01$$

