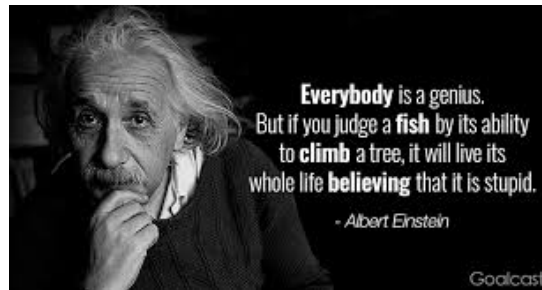


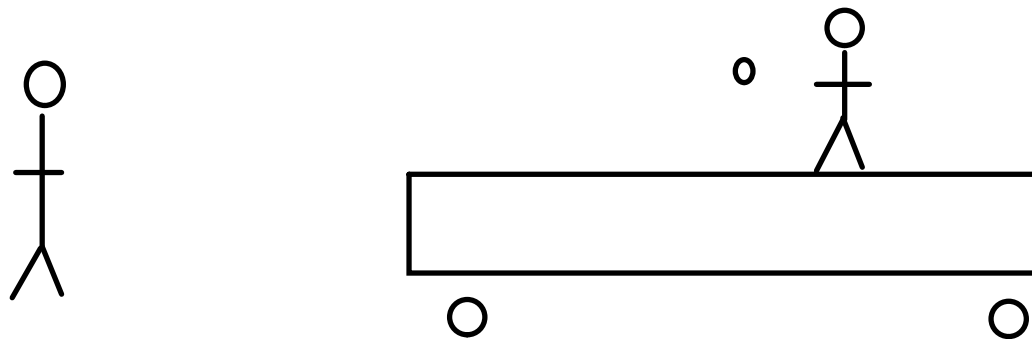
Theory of Relativity

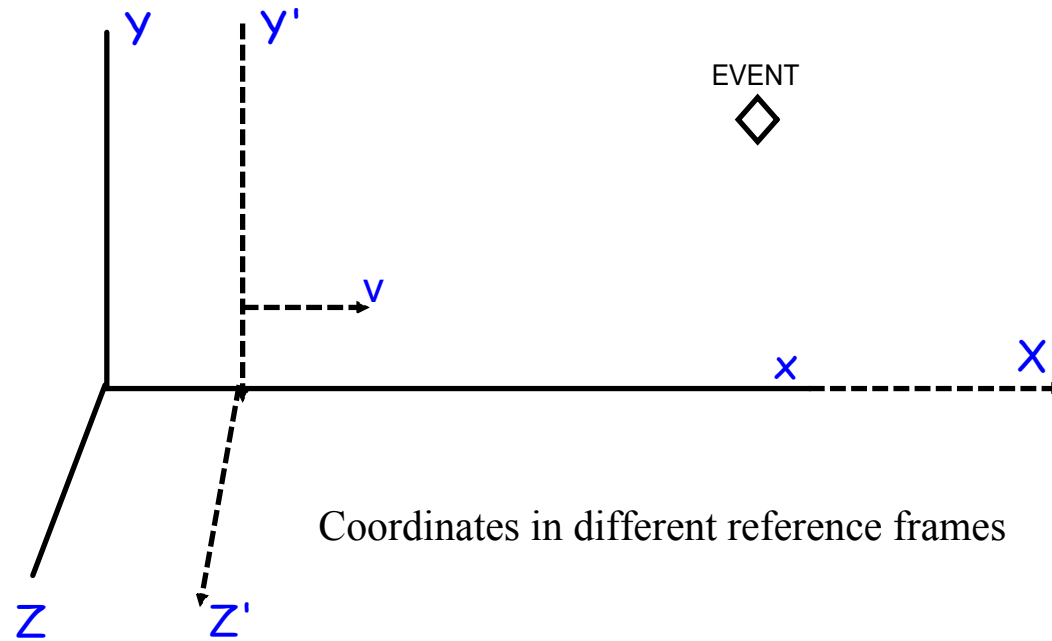
Postulates:

1. The laws of physics are the same in all inertial reference frames
2. The speed of light in a vacuum is the same for all inertial observers.



Adding speeds.





Position

$$X' = \frac{X-vt}{\sqrt{1-v^2/c^2}}$$

Length Contraction

$$L = L_0 \sqrt{1-v^2/c^2}$$

Time Dilation

$$t = t_0 \frac{1}{\sqrt{1-v^2/c^2}}$$

RelativityNumbers.pdf - Adobe Reader

File Edit View Document Tools Window Help

1 / 1 75% Find

			L if	t if	
	v/c	v ² /c ²	Lo=1	To = 1	L*T
Speed of sound	0.000001	1E-12	1	1	1
	0.1	0.01	0.994987437	1.005037815	1
	0.5	0.25	0.866025404	1.154700538	1
	0.9	0.81	0.435889894	2.294157339	1
	0.99	0.9801	0.14106736	7.08881205	1
	0.999	0.998001	0.044710178	22.36627204	1
	0.9999	0.99980001	0.014141782	70.71244595	1
	0.99999	0.99998	0.004472125	223.6073568	1

Changes are very, very, very small until you get near the speed of light.

Title: May 7-7:30 PM (1 of 1)

11.69 x 8.26 in

start

RelativityNumbers... Document1 - Micro... Relativity * - SMAR... 8:21 PM

You tube: Theory of Relativity

<http://www.youtube.com/watch?v=AZ6N85lNgHY&feature=PlayList&p=50193D62F125C243&index=0&playnext=1>



Einstein's Big Idea

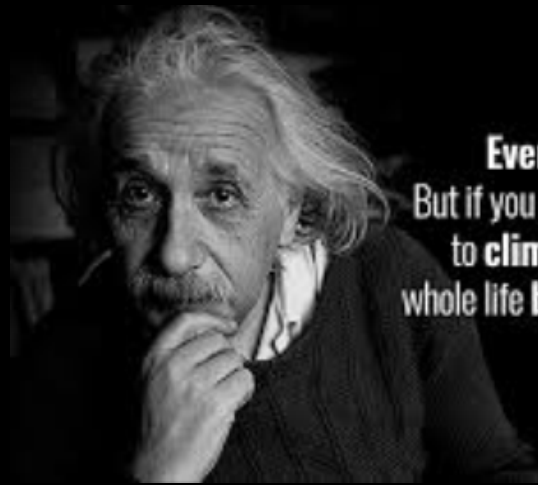
<http://www.youtube.com/watch?v=V7vpw4AH8QQ&feature=PlayList&p=50193D62F125C243&index=1>



Time Travel Is Possible

<http://www.youtube.com/watch?v=X02WMNoHSm8&NR=1>





Everybody is a genius.
But if you judge a **fish** by its ability
to **climb** a tree, it will live its
whole life **believing** that it is stupid.

- *Albert Einstein*

Goalcast