What is the inverse of the Lorentz transformations:

$$x_B = \gamma (x_A - v t_A)$$
$$t_B = \gamma \left(t_A - \frac{v}{c^2} x_A\right)$$

A) $$x_A = \gamma^{-1} (x_B + v t_B)$$
$$t_A = \gamma^{-1} \left(t_B + \frac{v}{c^2} x_B\right)$$

B) $$x_A = \gamma (x_B + v t_B)$$
$$t_A = \gamma \left(t_B + \frac{v}{c^2} x_B\right)$$

C) $$x_A = \gamma (x_B - v t_B)$$
$$t_A = \gamma \left(t_B - \frac{v}{c^2} x_B\right)$$

D) $$x_A = \gamma^{-1} (x_B + v t_B)$$
$$t_A = \gamma^{-1} \left(t_B + \frac{v}{c^2} x_B\right)$$

E) The Lorentz transformations are not invertible

What is the inverse of the Lorentz transformations:

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B) $x_A = \gamma\left(x_B + v t_B\right)$

$t_A = \gamma\left(t_B + \frac{v}{c^2} x_B\right)$

Just take v -> -v

C) $x_A = \gamma\left(x_B - v t_B\right)$

$t_A = \gamma\left(t_B - \frac{v}{c^2} x_B\right)$

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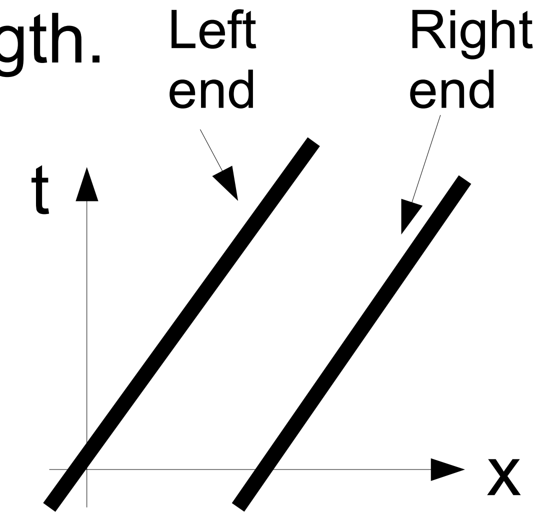
E) The Lorentz transformations are not invertible

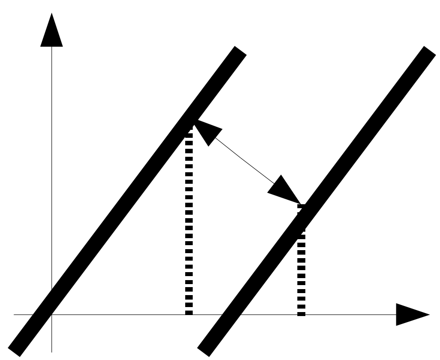
A bar is moving with velocity v along its length. How can its apparent length be measured?



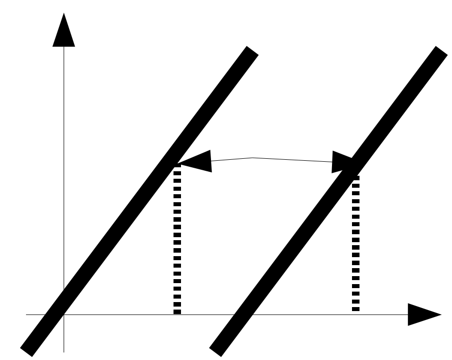
A) Only by an observer at rest w.r.t the bar

B) Only by watching the bar move w.r.t. a fixed observer (like in the tutorial)

C) Like this:



D) Like this:



E) Moving objects don't have a length

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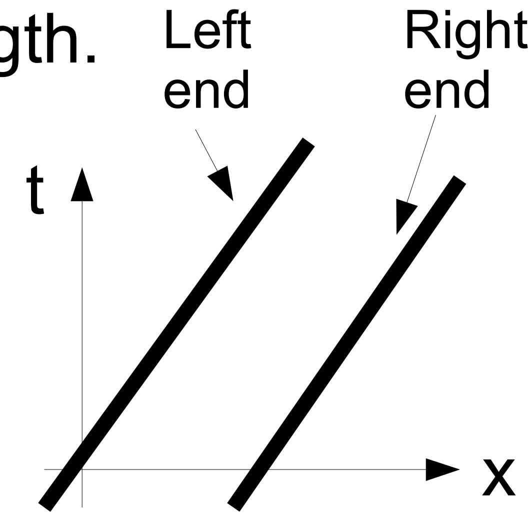
How can its apparent length be measured?



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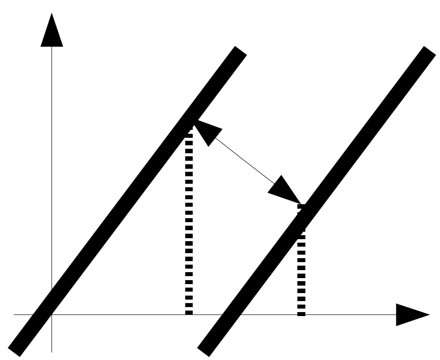

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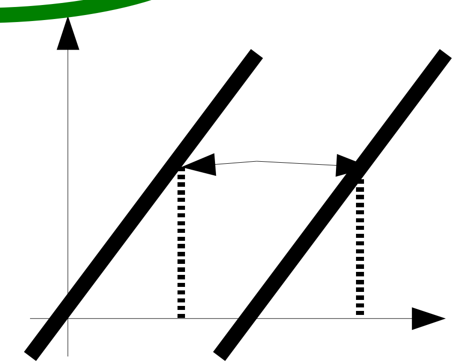

E) Moving objects don't have a length

Length is measured by finding the positions of the two end at the same time

In the table [lecture notes, Lecture 7, page 3], the star should be replaced with

A) γT

B) T/γ

C) T

D) $2\gamma T$

E) $2T/\gamma$

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A) γT

B) T/γ

C) T

D) $2\gamma T$

E) $2T/\gamma$

Just plug in and simplify...