Quiz #1

1. Bob watches Alice doing a physics problem on her rocketship, which is travelling at 0.5c compared to him. He sees that it takes her 10 minutes to do the problem. How long does it really take her, in her frame?

A) 8.7 minutes **B) 10 minutes** **C) 11.5 minutes**

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2. Alice is 10 light seconds away from Bob (in his frame), moving away from him at 0.4c. If she sends a radio transmission to Bob, how long will it take to reach him (in his frame)?

A) 4s **B) 6s** **C) 10s** **D) 25s**

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3. The parameter γ is always ___ or equal to 1.

A) greater than **B) less than**

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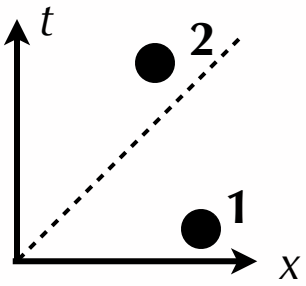
4. If c=1, event 1 on this graph always happens ____ event 2.
(The dashed line is $x = t$.)

A) after **B) before** **C) it depends on the frame**



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5. A clock travels from event A to B, moving at a constant speed in Bob's frame.
If t_A=0 at event A in Bob's frame, the time the clock shows must be

A) the coordinate time in Bob's frame

B) the proper time **C) the spacetime interval**

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6. Alice and Bob are twins. Alice travels to Proxima B and back, moving at 0.6c, while Bob stays on Earth. When she returns Alice is ___ Bob.

A) older than **B) the same age as** **C) younger than**

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ACABBC

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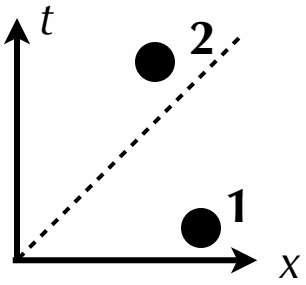

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