

Chapter 27 extra credit

Started: Nov 12 at 11:05pm

Quiz Instructions

This is an extra credit assignment related to chapter 27 in which we covered some aspects of special relativity. There are 5 questions, each worth 4 percentage points, for a possible total of 20 percentage points. These points will be figured into the score for Exam 4. **Nothing you do here can harm your grade in this course; this is extra credit.**

[The Man Who Time Travelled 0.2 Seconds](https://youtu.be/LwKZjPBYwCA) [.\(https://youtu.be/LwKZjPBYwCA\)](https://youtu.be/LwKZjPBYwCA)



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After watching the above video (probably several times), please use your knowledge of special relativity and a *healthy amount of skepticism* to answer the following questions.

Question 1

4 pts

A better title for this video would be:

- ☐ The Man Who Time Travelled 0.2 Seconds
- ☐ The Man Whose Clock Runs 0.2 Seconds Fast
- ☐ The Man Who Time Travelled 0.2 Seconds Into the Future
- ☐ The Man Whose Clock Runs 0.2 Seconds Slow

Question 2

4 pts

The time interval we are studying is *actually*

- ☐ 2.0 seconds.
- ☐ 0.2 seconds.
- ☐ 0.02 seconds.
- ☐ 0.002 seconds.

Question 3**4 pts**

Using the cited 803 days, 9 hours, and 39 minutes elapsed Earth time, how fast should this person travel to result in clocks that mismatch by 1 hour?

- ☐ $3E6$ m/s
- ☐ $3E7$ m/s
- ☐ $3E8$ m/s
- ☐ $3E9$ m/s

Question 4**4 pts**

There are two clocks at work here: one in the moving frame and one in the rest (Earth) frame. Which one should we trust?

- ☐ The cosmonaut's clock
- ☐ The Earth clock
- ☐ Both are correct
- ☐ Neither are correct

Question 5**4 pts**

Recalling that Nature does not prefer one frame of reference (perspective) over another, how would the Earth's clock appear from the point-of-view of the cosmonaut?

- ☐ It's running fast.
- ☐ It's running slow.
- ☐ It's running normally.
- ☐ It's running abnormally.

No new data to save. Last checked at 11:06pm

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