

Latex Template

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Question 1

Pf:

About this point I got points docked off because of not using index notations. I'll try and practice using that more often so I can get used to it.

Question 2

Pf:

Question 3

Pf:

Question 4

Pf:

Question 5

Pf:

About this question, I assumed that in the initial rest frame, the observed acceleration of the two spaceships are always some constant a within some given time (where the speed doesn't exceed c), which in general is not that practical. But I'm not sure why exactly I got the points docked off, because I did mention we can't keep accelerating at constant rate (in an inertial frame) forever.

Question 6

Pf:

About this question, I got marked wrong because the grader claimed that I didn't specify the boost in other directions. However I did mention that no matter which "direction" in the space we're boosting to (which has no relation with the coordinates yet, just a vector in the 3-dimensional space), we can always choose spatial coordinates (basis) so that the boosting direction is always aligned in the x -direction. Since I've specified this (and submitted a regrade request before), I still got marked off, I don't know why.

Question 7

Pf:

Even though I got this question right, but I still got marked off by 0.1 pt.