

Relativity

Name _____

Chapters 15 and 16

concepts:

1) What are the two postulates of the Theory of Special Relativity?

Postulate #1:

Postulate #2:

2) What are four implications of the Theory of Special Relativity?

Implication #1:

Implication #2:

Implication #3:

Implication #4:

3) Name two things that have been created due to the Theory of Special Relativity?

4) What is time or more accurately - what is space – time continuum?

5) What happens to a ball that is thrown very fast? (give three things)

6) What happens when a car traveling near the speed of light turns on its headlights?

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7) According to the Theory of Special Relativity can we travel backwards in time? Why or why not.

8) What are the two postulates of the theory of general relativity?

Postulate #1

Postulate #2

9) Why did Einstein have to have the first postulate?

10) What is gravity?

11) What is a black hole?

12) What is a worm hole?

Exercises:

13) Find the time dilation effect if you are traveling at 100,000,000 m/s?

14) Find the change in length of a 4 meter bar traveling at the same speed as problem 13?