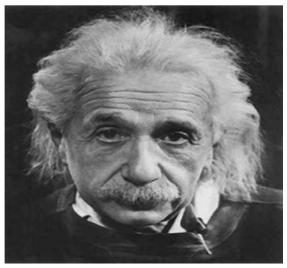
Special Relativity Worksheet Name_____

1. The general rule regarding time dilation for objects moving at relativistic speeds is that "Fast clocks move _____".

2. How is light different than any other wave or object that travels through space?



3. What is a light-year? Is it a measure of a distance or of time?

4. When we look at a star turn into a supernova 100,000 light-years away from us, are we watching it happen as it is actually happening? How long ago did it happen?

5. If the sun suddenly exploded, how long would it take us to realize it? (Mr. Schober talked about this in class)

6. What is the 'speed-limit' for the universe? What is this values symbol?

7. Explain in detail the light clock example, as a way of describing why time dilation happens because of the 2nd Postulate of Special Relativity. (finish writing on back if needed)

8. When Einstein said in the 1st Postulate of Special Relativity that "the laws of physics are the same in any inertial reference frame", what do you think he meant by 'inertial reference frame'?

9. Does space and time exist in the universe, or does the universe exist in space and time?

10. According to Einstein is time absolute, in other words is it static and unchanging for all observers?

11. Name and describe 3 different tests that humans have performed to prove that time dilation actually does happen. (continue on back if needed)

12. Explain why using examples we talked about in class why light cannot be observed to be going different speeds by different observers. (Think of the traffic accident or the star)