

1. These terms correspond to the mixing of space and time in special relativity
2. d
3. Yes the answer is different. We will find that light takes 3 ns for the trip in the direction of propagation and 0.333 ns for the return trip. Note  $2 \times 1.667 = 3.333$ .
4. b
5. The astronaut appears the same height they perceive themselves to be:  $h$
6. e
7. a
8. c
9. d
10. They are the same to many digits of precision