Physics 122
Chapter 26 Problem Assignment

Questions from the text 3, 5, 7, 9

Read the chapter from Mr. Tompkins in Paperback that I have posted on our website.

Problems from the text 1, 4, 8, 11, 14

Harder problems that you may wish to try

1. An alien spaceship moving at a constant velocity goes from one end of the solar system to the other (a distance of 10.5 hours) in 13.2 hours as measured by clocks in an inertial reference frame attached to the solar system. What time passes during the trip as indicated by the clocks on the spaceship?

2. A muon is created by a cosmic ray interaction with the atmosphere at an altitude of 60km. After its creation the muon moves straight downward at a speed of 0.998c as measured by an observer on the Earth. After the muon's internal clock reaches 2μs, it decays.
    a. If the muon's internal clock agreed with clock's on the Earth, how far would it go before it decayed?
    b. Using your understanding of relativistic time, find out how far if really travels as seen by an observer on the ground.