

PREFLIGHTS**LESSON 34 – RELATIVISTIC MECHANICS****LEARNING OBJECTIVE:**

Apply the laws of mechanics and dynamics to relativistic situations.

1) What is the difference between proper velocity and ordinary velocity? Which one is used for calculating relativistic momentum? Why?

2) What two major physics concepts are used to solve Example 12.8? In one or two sentences, describe how the solution method would change if the neutrino had mass (which it does).

3) Will the scattered photon in Example 12.9 have a larger or smaller wavelength than the original photon? Does that make sense? Why?

4) In Example 12.12, why is there no momentum in the classical analysis, but there is a momentum in the relativistic analysis? What is the difference between the two?

5) Note: This is a review question from Chapter 8. On a separate sheet of paper that I will collect at the beginning of class, calculate the electromagnetic momentum for the circuit in Example 12.12. Does your answer for electromagnetic momentum cancel out with the “hidden” linear momentum?

6) What did you find difficult or confusing in the pre-class work? If nothing was difficult or confusing, tell me what you found most interesting. Please be as specific as possible.

7) Document whatever help you received on the preclass work.