

Homework Assignment Due Thursday, Oct. 29

- 1) Taylor and Wheeler, Exercise 3-1: “Relativity and swimming”
- 2) Taylor and Wheeler, Exercise 3-4: “The Principle of Relativity”
- 3) In this problem I want you to show that if the inverse Lorentz transform is applied to spacetime coordinates that have been transformed forward with the same magnitude of relative velocity, then you end up with the same coordinates that you started with.
 - a) Write down the transformation for (x, t) in terms of (x', t') for a relative velocity v .
 - b) Now write down the transformation for (x', t') in terms of (x'', t'') for a relative velocity $-v$, i.e. the inverse transformation.
 - c) Carry through the algebra to express (x, t) in terms of (x'', t'') . Is this what you expect?