

Black Holes, Problem Set 8 for Thursday, Oct. 31

Reading from Spacetime Physics

Study Chapter 7 to the end of Section 7.5, p. 206.

This brings you to the end of the material you will be studying in *Spacetime Physics*. For the subsequent reading and assignment (Monday, Nov. 4), you will be using Chapter 1 of *Exploring Black Holes*.

For Problem Set 8

Problem 1 — Do *Spacetime Physics* Problem 7-5 on p. 215

Problem 2 — Do *Spacetime Physics* Problem 7-6 on p. 215

Problem 3 — Do *Spacetime Physics* Problem 7-7 on pp. 215-216

Worth Thinking About: *Spacetime Physics* Problem 7-12 on pp. 217-219

This is a crafty and detailed alternative derivation of the formulas for relativistic momentum and energy. The usual derivation is so slick that it is very hard to appreciate.

This problem is not assigned, but I plan to include it in my solutions.