

Physics 125 Problem Set 5

Harry Nelson

due Friday, May 1 in class
Midterm Monday, May 4 in class

-
1. Griffiths 3.24. It is really a good idea in this problem to draw a picture, showing the 3-momentum of particle A in the center of mass system both before and after the scattering. Is the magnitude of this 3-momentum the same before and after the scattering? You can successfully decompose the before and after 3-momentum into components along *their sum*, and perpendicular to their sum... use a little triangle geometry to do the decomposition in terms of the center of mass scattering angle θ . Then you can work out the Lorentz transformation you need, solve it, get the velocity and the energy of particle A in the Breit frame.
 2. Griffiths 3.25.
 3. Griffiths 4.2
 4. Griffiths 4.3
 5. Griffiths 4.8
 6. Griffiths 4.9
-