PHYS 301 De Broglie wavelength and kinetic energy Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

$$E^{2}=p^{2}c^{2}+m\_{0}^{2}c^{4}$$

Prove the following expression for both relativistic and nonrelativistic speeds; where λC = h/m0C, Compton wavelength, *Ek* is the kinetic energy, and *E0* = *m*0*c2*,is the rest energy. 

