

Physics 262: Homework #13

1. (1 point) Use Lorentz transforms to show that the spacetime interval  $\Delta s^2$  is invariant.
2. (1 point) Show for  $N=2$  and  $N=3$  that the binomial expansion,  $(1 + \epsilon)^N = 1 + N\epsilon$  is valid for  $\epsilon \ll 1$ . Can you think of a way to show this when  $N$  is negative or not an integer?
3. (1 point) Ohanian 2.13
4. (1 point) Ohanian 2.20
5. (1 point) Ohanian 2.22
6. (1 point) Ohanian 3.6