MASSACHUSETTS INSTITUTE OF TECHNOLOGY
Physics Department

8.323: Relativistic Quantum Field Theory I

PROBLEM SET 8

REFERENCES: Peskin and Schroeder, Chapter 3.

Problem 1: The Gordon Identity

Problem 3.2 of Peskin and Schroeder. *Hint:* the identity depends on the Dirac equation for the spinor $u(p)$, the definition $\sigma^{\mu\nu} \equiv \frac{i}{2}[\gamma^\mu, \gamma^\nu]$, and some basic properties of the gamma matrices.

Problem 2: Majorana Fermions

Problem 3.4 of Peskin and Schroeder.

Problem 3: Supersymmetry

Problem 3.5 of Peskin and Schroeder.