Phy 616: Problem Set 4
(Due: November 13, 2006)

16) Peskin & Schroeder, Problem 3.7.

17) Peskin & Schroeder, Problem 3.8.

18) A. Zee, Problem I.7.2.

19) A. Zee, Problem I.7.3.

20) A. Zee, Problem I.7.4.

21) Peskin & Schroeder, Problem 3.5 (*extra credit).*

22) Show that $\not{p}\not{p} = p^2$. Derive the completeness relations

$$\begin{aligned} \sum_{s=1,2} u^{(s)}(p)\bar{u}^{(s)}(p) &= \not{p} + m \\ \sum_{s=1,2} v^{(s)}(p)\bar{v}^{(s)}(p) &= \not{p} - m \end{aligned}$$

(*extra credit).*