Introduction to quantum electrodynamics
135.045 - (VO 2,0) 2014S

Homework #11 (May 26, 2014)

11.1 Show (5.30):

$$T\varphi(x')\varphi^\dagger(x) = <0|T\varphi(x')\varphi^\dagger(x)|0> + :\varphi(x')\varphi^\dagger(x):$$

11.2 Show that the free time evolution of the Dirac field (5.33) is effected by the operator :H: from (5.38).

$$\text{(Do this by showing } \frac{\partial}{\partial t}\Psi_\alpha(x) = i[:H:,\Psi_\alpha(x)].)$$