

Physics 113 Quantum Theory Seminar

Assignment 4 February 13, 2013

This week we develop the quantum formalism.

Part 1: Readings

Zettili: Chapter 3(Pages 183-191 Sections 3.7-3.8 + solved problems

Boccio - Chapter 6(Pages 394-459 Sections 6.9-6.18).

Part 2: Problems

1. Boccio 6.19.08 - Scale Transformation
2. Boccio 6.19.11(6.19.12) - A Very Useful Identity
3. Boccio 6.19.13 - Another Very Useful Identity
4. Boccio 6.19.14 - Pure to Nonpure?
5. Boccio 6.19.18 - The Controlled-Not Operator
6. Boccio 6.19.19 - Creating Entanglement via Unitary Evolution
7. Boccio 6.19.20 - Tensor-Product Bases
8. Boccio 6.19.21 - Matrix Representations
9. Boccio 6.19.22 - Practice with Dirac Language for Joint Systems
10. Boccio 6.19.23 - More Mixed States

Midterm Problem #1:

Boccio 6.19.10 - An Instantaneous Boost (Consultation with professor only; solution written up in LaTeX)