

Foundations of Quantum Physics Burkhardt & Leventhal

KNOWN ERRORS AND OTHER UNDESIRABLES

Chapter 2

Section 2.4 (p29) Remove the ö in the section head.

Sentence after Equation 2.18 (p33): insert commas "...using the TDSE, Equation 2.17, and..."

Sentence before Equation 2.22 (p33): remove "equation" after TDSE.

Chapter 3

Equation 3.12 (p54): the limits of integration in the middle line should be $0 \rightarrow L$.

Equation 3.33 (p60): the first term should be the second derivative.

(p65) The 2nd paragraph after Table 3.3 in the printed book that begins with "The zero of these functions....". About halfway down there is an errant "y" before "Because".

Second paragraph under Figure 3.12 (p69) the paragraph: "Before leaving the discussion of the nature of the harmonic oscillator eigenfunctions, let us examine one of them, $\psi_3(x)$, in more detail. In particular, we wish to see how the harmonic oscillator eigenfunctions conform with the general characteristics of eigenfunctions **laid out at the beginning of this chapter**. The eigenfunctions for the particle-in-a-box do indeed conform, but, as noted previously, the infinite step in the potential energy and zero potential energy in the box introduced features and peculiarities in the wave function that are not present when the potential energy is a smooth ..."

The large print part of this paragraph is incorrect because "characteristics of the eigenfunctions" was laid out in the previous chapter, not this one.

Chapter 4

Second sentence of the first full paragraph following Equation 4.41 (p92): "Three of the most important properties of the δ -function are listed in Table 4.1." *There are **four** of the most important properties in the table, not three.*

Equations 4.56 and 4.57 right before Section 4.5 (p96). *There are two equation numbers.*

Problem 4.14 (p110): "Use Equation 2.2 to write ..." should be "Use Equation 4.38 to write ..."

Chapter 5

Line under Equation 5.148 (p156): Insert the words "*integral on the*" so it reads "where the **integral on the** left-hand side is zero. Equation 5.148 ..."

Chapter 7

Second sentence under Equation 7.16 (p222): Change "...second, its eigenfunction is $(n - 1)$." → "second, its eigenvalue is $(n - 1)$." so that "eigenfunction" → "eigenvalue"

Chapter 8

Section: Example: Two noninteracting fermions (p289): The line above the first equation of the example "...by integers 0, 1, 2 ... the state kets....". Remove the 0 so it reads "...by integers 1, 2 ... the state kets....".

Chapter 9

Section: The Infinite Spherical Square Well (p308): Equation 9.35, second line should be $r > a$, not $r < a$.

Chapter 10

Equation 10.14 (p351). The entire expression should = 0.

Table 10.3 (p357). The 4th entry, $R_{30}(r)$. The exponential should be $e^{-Zr/3a_0}$, not $e^{-Zr/2a_0}$.