

PHYS 451 – HOMEWORK # 3 – DUE TUESDAY, 10/17/2013

1. P4.13 p.126.
2. P4.14 p.126.
3. P4.17 p.127.
4. P4.21 p.128.

Key

Unless otherwise specified, questions and problems are from the course textbook:

Richard W. Robinett
QUANTUM MECHANICS (SECOND EDITION)
Oxford University Press (2006)
ISBN-13: 978-0198530978

P(Q)X.Y p.Z means “Problem (Question) P(Q)X.Y of Chapter X, page Z.”

Example: Problem P1.2 p.24 = Problem P1.2 of Chapter 1, page 24.

Quantum mechanics, science dealing with the behavior of matter and light on the atomic and subatomic scale. It attempts to describe and account for the properties of molecules and atoms and their constituents—electrons, protons, neutrons, and other more esoteric particles such as quarks and gluons. Basic considerations. At a fundamental level, both radiation and matter have characteristics of particles and waves. The gradual recognition by scientists that radiation has Quantum Mechanics: The Uncertainty Principle. BestOfScience. 5:49. Quantum Mechanics Concepts: 1 Dirac Notation and Photon Polarisation. DrPhysicsA. 1:05:56. Quantum Mechanics Concepts: 1 Dirac Notation and Photon Polarisation. DrPhysicsA. Quantum mechanics is a branch of science that deals with atomic and molecular properties and behavior on a microscopic scale. Although thermodynamics may be concerned with the heat capacity of a gaseous sample, quantum mechanics is concerned with the specific changes in rotational energy states of the molecules. Chemical kinetics may deal with the rate of change of one substance into another, but quantum mechanics is concerned with changes in vibrational states and