Homework 2: Simple Algorithms

Handed out Monday, September 16.
Due at the beginning of class Monday, September 23, 2:00 PM.
Late homeworks will NOT be accepted. Please write homeworks up neatly and show how you derived your answers, as discussed in the class.

Problem 1. John bought the following textbooks at the University bookstore:
- C How To Program for $55.00
- Introduction to Calculus $65.00
- Introduction to Chemistry for $45.00
- Introduction to Physics for $50.00

The sales tax for Maryland state is 5%. How much does John has to pay to the cashier?
Solve this problem in terms of
(a) Specific solution.
(b) Pseudocode for a generic solution in terms of number of books, cost of the books, and state sales tax rate.

Problem 2. Mary’s grades for CMSC104 are as follows:
- Homeworks: 80, 90, 95
- Projects: 60, 70, 80, 90, 95
- Exams: 77 82 93
- Final: 88

These grades are combined according to the following weights to produce a final total grade.
- Homework total: 10 %
- Project total: 40 %
- Exam total: 30 %
- Final: 20 %

What is Mary’s final total grade for CMSC104? The total will be a number in the range 0–100.
Solve this problem in terms of
(a) Specific solution.
(b) Pseudocode for a generic solution in terms of number of homeworks, projects, exams, and assuming one final exam. You may assume that the weights for the various elements (homeworks, projects, exams, and final) are the same as those given above.