**Question 1**

Create a class named Billing that includes three overloaded computeBill() methods for a photo book store.

•• When computeBill() receives a single parameter, it represents the price of one photo book ordered. Add 8% tax, and return the total due.

•• When computeBill() receives two parameters, they represent the price of a photo book and the quantity ordered. Multiply the two values, add 8% tax, and return the total due.

•• When computeBill() receives three parameters, they represent the price of a photo book, the quantity ordered, and a coupon value. Multiply the quantity and price, reduce the result by the coupon value, and then add 8% tax and return the total due.

Write a main() method that tests all three overloaded methods. Save the application as Billing.java.

**Question 2**

Create a class named **Patient** that includes an ID number, age, and BloodData. Provide a default constructor that sets the ID number to 0, the age to 0, and the BloodData values to O and 1. Create an overloaded constructor that provides values for each field. Also provide get methods for each field. Save the file as Patient.java. Create an application that demonstrates that each method works correctly, and save it as TestPatient.java.

**Question 3**

People who deal with historical dates use a number called the *Julian day*to calculate the number of days between two events. The Julian day is the number of days that have elapsed since January 1, 4713 B.C. For example, the Julian day for October 16, 1956, is 2435763. There are formulas for computing the Julian day from a given date, and vice versa. One very simple formula computes the day of the week from a given Julian day:

Day of the week = (Julian day + 1) % 7

where % is the Java modulus operator. This formula gives a result of 0 for Sunday, 1 for Monday, and so on, up to 6 for Saturday. For Julian day 2435763, the result is 2 (Tuesday). Your job is to write a Java application that requests and inputs a Julian day, computes the day of the week using the formula, and then displays the name of the day that corresponds to that number. Your output might look like this:

 Enter a Julian day number and press Enter.

**2451545**

Julian day number 2451545 is a Saturday.

Enter a Julian day number and press Enter.

**2451547**

Julian day number 2451547 is a Monday.

**Question 4**

Create a class named Shirt with data fields for collar size and sleeve length. Include a constructor that takes arguments for each field. Also include a String class variable named material and initialize it to “cotton”. Write a program named TestShirt to instantiate three Shirt objects with different collor sizes and sleeve lengths and then display all the data, including material, for each shirt.