Assignment 2

Q1. Create a class called Invoice that a hardware store might use to represent an invoice for an item sold at the store. An Invoice should include four pieces of information as fields—a part number (type String), a part description (type String), a quantity of the item being purchased (type int) and a price per item (double). Your class should have a constructor
that initializes the four instance variables. Provide a set and a get method for each instance variable. calculates the invoice amount (i.e. multiplies the quantity by the price per item), then returns the amount as a double value.
If the quantity is not positive, it should be set to 0.
If the price per item is not positive, it should be set to 0.0.
Write a test application named InvoiceTest that demonstrate class Invoice's capabilities.

Q2. Create a class called Employee that includes three fields—a first name (type String), a last name (type String) and a monthly salary (double). Provide a constructor that initializes the three instance variables. Provide a set and a get method for each instance variable. If the monthly salary is not positive, do not set its value. Write a test application named EmployeeTest that demonstrates class Employee's capabilities. Create two Employee objects and display each object's yearly salary. Then give each Employee a 10% raise and display each Employee's yearly salary again.

Q3. Create a class called Date that includes three fields—a month (type int), a day (type int) and a year (type int). Provide a constructor that initializes the three instance variables and assumes that the values provided are correct. Provide a set and a get method for each instance
variable. Provide a method displayDate that displays the month, day and year separated by forward slashes (/). Write a test application named DateTest that demonstrates class Date's capabilities.

Q4. Create a class Point2D , in package - "com.app.geometry" : for representing a point in x-y co-ordinate system. Create a parameterized constructor to init x & y co-ords. Add a method to return string form of point's x & y co-ords
Hint : public String getDetails())

Add isEqual method to Point2D class :a boolean returning method : must return true if n only if both points are having same x,y co-ords or false otherwise.
Add calculateDistance method to calculate distance between current point and specified point & return the distance to the caller.

Hint : Use distance formula . Use java.lang.Math class methods --sqrt, pow etc.
Write TestPoint class , in package "tester" , with a main method, Accept co ordinates of 2 points from user (Scanner) --to create 2 points (p1 & p2)

Use getDetails method to display point details.(p1's details & p2's details)

Invoke isEqual & display if points are same or different (i.e p1 & p2 are located at the same position)
If they are not located at the same position , display distance between p1 & p2