

CSCI 111

Practice

Midterm

Question Number	Point Value	Points Awarded
1	40	
2	20	
3	15	
4	25	
Total	100	

Name _____

Student Id _____

Lab Section _____

- 50 Minutes.
- Write legibly and keep answers concise.
- You do not need to put comments in any code you write.
- You may use a laptop to test solutions as well as reference previous labs.
- NO USING THE INTERNET. Disable your wireless connection.
- NO NOTES, PARTNERS, TELEPHONES...

Question one - (40 points) Implement a Book class for a book store as described: A Book has a title, cost, and number in stock. Set the title and cost to values passed to the constructor. Create a “get method” for each instance variable. Create a method that will increase the number in stock by an amount provided. Finally, create a method that will return the total value of the given book in stock (do not worry about formatting this output to a normal currency value). You do not need to provide any comments in your code.

Here is sample code and output from a Driver for your Book class:

```
Book book1 = new Book("Extreme Alpinism", 19.95);
book1.increaseStock(5);
book1.increaseStock(2);
System.out.println(book1.getNumInStock() + " copies of " + book1.getName() + " in stock.");
System.out.println("The value of " + book1.getName() + " in stock is $" + book1.calcStockValue());
```

Output:
7 copies of Extreme Alpinism in stock.
The value of Extreme Alpinism in stock is \$139.65

Question Two (20 points) – Given the Driver below, create the classes and method headers needed to get that Driver to compile. Note: You do not need to create any instance variables, nor do you need to put anything in the method bodies EXCEPT a bogus return value (ex: `return 0;`), if one is required. If I put your code into a computer, it should compile. Just make the classes, and make the correct method headers. You do not need to provide any comments in your code.

```
public class Driver
{
    public static void main(String[] args)
    {
        Marker m1 = new Marker("red");
        Marker m2 = new Marker("blue");

        m1.drawLine(7.3);
        int val = m2.getUses();
    }
}
```

Write your class(es) here:

Question Three (15 points) – Convert the following switch statement to an if-else statement. You do not need to provide any comments in your code.

```
switch (size)
{
    case 6:
        price = 44.99;
        break;
    case 7:
        price = 49.99;
        break;
    case 8:
        price = 54.99;
        break;
    case 9:
        price = 59.99;
        break;
    case 10:
        price = 64.99;
        break;
    default:
        price = -1;
        System.out.println("size error");
        break;
}
```

Question Four (25 points) – Answer the following short answer questions. If it asks for the method declaration, no method body is needed, just the first line: public...

- a. (3 points) Write the method declaration for a public method that takes two integers as parameters and returns a boolean value.
- b. (2 points) Call your method from above on `instance1` with any input and store the result in a variable you declare.
- c. (2 points) What is the maximum value that the following line of code could print?
`System.out.println((int) (Math.random() * 10 + 1));`
- d. (4 points) In the University class below, write the method declaration for the following `getCost` method:
`double tuition = University.getCost(782.42, new Student(int credits));`

```
public class University
{
}

```
- e. (2 points) In general, should instance variables be public or private? Why?
- f. (3 points) Create an instance of the `SpringBreak` class using a constructor that takes a string as the only parameter (use any string). Also assign your instance to a variable you declare.
- g. (2 points) What does `n` equal after this switch statement is executed?

```
int n;
int x = 1;
switch(x)
{
    case 2:
        n = 2;
    case 1:
        n = 1;
    default:
        n = 0;
}

```
- h. (4 points) What is *Object Initialization*?
- i. (3 points) What does a constructor do (they do at least two things)?