1) After the following statements: [1]

```
for (int i = 6; i > 1; i--) {
   char c = (i <= 3) ? 'A' : 'B';
   System.out.print(c + "+");
}
```

What will print on the console?   ___**B+B+B+A+A+**__

2) After the following statements: [1]

```
boolean a = false;
boolean b = true;
boolean c = true;
if (a | (b & c))
   System.out.println("First");
else
   System.out.println("Second");
```

What will print on the console?   __**First**___

3) To prevent a subclass from having access to a member of   [1]

a superclass, use the __**private**____ modifier.

4) Write the following code using the **?** operator: [1]

```
if (Y < 5) X = 10;
else X = 20;
```


_____**X = (Y < 5) ? 10 : 20** ____

5) Complete the following sentences. [2]

The __**extends**__ keyword is used when inheriting from a regular class.

The __**implements**___ keyword is used when inheriting from an interface.

6) When the contents of a String are described as being **immutable**, this means: [1]

a) The characters of String cannot be altered.
b) The characters of a String cannot be accessed.
c) The String contents cannot be shared with other String instances.

    Answer: _____**a**____

7) Given the following code snippet: [1]

```
class Delta {
    public Delta() { … }
}
class Echo extends Delta {
    public Echo(int a) { … }
}
class Foxtrot extends Echo {
    public Foxtrot(int a) {
       super(a);
    … }
}
```
In what order do the constructors for these classes complete their execution when a **Foxtrot** object is instantiated?

    Answer: _____**Delta->Echo->Foxtrot**____

Use the code example shown to answer the following questions:

```java
public class A (
    private int i, j;
    protected int area;
    public Garage garage = new Garage();
    private ArrayList<Vehicle> list = new ArrayList<Vehicle>();

    public A(int a, int b) {
        i = a;
        j = b;
        area = calcArea();
    }

    private int calcArea() { return i * j; }

    public void add(Vehicle vehicle) {
        list.add(vehicle);
    }

    public void show() {
        area = calcArea();
        System.out.println("Garage dimensions: " + i + "," + j);
    }

    public static int area(int x, int y) {
        x -= 1;
        y += 2;
        return (x * y);
    )
}

public class B extends A {
    public B(int a, int b) {
        super(a,b);
    }

    public void show() {

        __super.show(); _              // ← Write question 8 answer here

        System.out.println("area: " + area};
    }
}
```

8) In the Class B show() method, if you wished to call the version of show() defined by superclass A, what code would you need to add?   [2]
(Write your answer above in the space shown above, within class B)

9) What is the returned result from a call to A.area(4,2)?
                                                                              [1]
                          Answer: ____12____

3

10) Packages are stored in (i.e. mirrored in) __ **"the filesystem" or "archive"**__. [2]

11) Draw the UML Association diagram.   [5]
(Note: interior class details may be omitted. Only draw associations between classes).

+2 Show class "A" and class "B"
+1 Show association from **"A"** to class "Garage"
+1 Show collection of Vehicles in class "A"
+1 Show class "B" inheriting (extending) from class "A"

12) Complete the following sentence: [1]

If you need to pass a primitive value as a reference, you can use

a ____ **wrapper** _____ class.

13) If all objects of a class needs to share the same variable, how should you declare
that variable?   [1]

Answer: _____ **static** _____