1- Find the errors, if any, in the following program and write a version correcting all of them then determine the output.

```java
class Person {
    public int age;
    public char gender;
}
class Error {
    public static void main(String args[])
    {
        Person p = new Person();
        p.age = 70;
        p.gender = 'M';
        if (p.age == 0)
            System.out.println("newborn");
        else if (p.age <= 12)
            System.out.println("child");
        else if (12 < p.age <= 19)
            System.out.println("teenager");
        else if (19 > p.age && p.age <= 65)
            System.out.println("adult");
        else
            System.out.println("senior");
        switch (p.gender)
        {
            case 'M':
                System.out.println("Male");
            case 'F':
                System.out.println("Female");
            default:
                System.out.println("Unknown gender");
        }
    }
}
```

2- Determine the output of the following program.

```java
class Output {
    public static void main(String args [])
    {
        int i = 1, j = 2, k = 3;
        if ( (--i == 1) && (++j == 3)){
            System.out.println("Nose " + k--);
        } else if ( (i == 0) && (j == 3)){
            System.out.println("Mouth " + --k);
        } else {
            System.out.println("Ear " + k++);
        }
    }
}
```

3- What is y after the following switch statement is executed?

```java
int x = 3, y=0;  
switch (x+3) {
    case 6: y = 1;  
    default: y += 1;  
}  
```
4- In the x-y coordinate plane, A point is represented by two numbers (x, y), where x and y are the coordinates of the x- and y-axes. We create the shown UML.

<table>
<thead>
<tr>
<th>Point</th>
<th>TestPoint</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ x: int</td>
<td>+ main(String[] args): void</td>
</tr>
<tr>
<td>+ y: int</td>
<td></td>
</tr>
</tbody>
</table>

1- Assume the Point class is written.
2- Using the class Point, write the class TestPoint that processes the following tasks:

a. Create a point and read its attributes from the keyboard.
b. In which quadrant is the point located? (I, II, III, IV)
c. Create another point and read its attributes from the keyboard.
d. Which point is closest to the origin point?

5- Write a program that reads an expression then calculates and print the result. Assumptions to be considered:

- The structure of expression is integer operator integer
- The operators are +, -, *, /, %, >, <
- The tokens are separated by spaces.
- Division by zero is undefined.
- Don’t use if-statements anywhere.

Examples:

<table>
<thead>
<tr>
<th>Input</th>
<th>-1 + 10</th>
<th>2 / -4</th>
<th>1 / 0</th>
<th>2 &gt; 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output</td>
<td>9</td>
<td>-0.5</td>
<td>Division by zero is undefined</td>
<td>false</td>
</tr>
</tbody>
</table>

6- Write a program – using if statements - that reads three integer numbers and prints them in ascending order. Make two different programs: one that exchanges the values of variables and another that does not.

7- Use a switch statement to rewrite the following if statement:

```java
if (a == 1) {
    x += 5;
} else if (a == 2) {
    x += 10;
} else if (a == 3) {
    x += 16;
} else {
    x += 34;
}
```