1. What gets printed? Please show all the output as it will appear, OR indicate “NO OUTPUT”, OR show the first 3 lines of output followed by “INFINITE LOOP.”

```java
int a = 6;
do{
    System.out.println(a);
a--;
}while (a < 5);
```

Output:
```
6
```

```java
for (int a = 4; a <= 5; a++)
    System.out.println(a * 2);
```

Output:
```
8
10
```

2. Suppose you are drawing in a Graphics context at position (x,y) an emoji that is controlled by a boolean variable `happy`. When `happy` is `true`, it should look like it is smiling; when `false`, it should look like it is frowning. Assume that the face and eyes are already drawn, so you just need to draw the mouth as an arc facing up or down. Here is the code using `if/else`:

```java
if (happy) page.drawArc (x+15, y+30, 20, 10, 180, 180);
else page.drawArc (x+15, y+30, 20, 10, 0, 180);
```

*Rewrite the above code using the conditional operator. (i.e., in a single line of code, without using `if/else`).*

```java
page.drawArc(x+15, y+30, 20, 10, happy? 180: 0, 180);
```

*** one more question on back ***
3. The following code prints a triangle shape using asterisk (star) characters. Modify it so that it prints also the number of stars for each line. The modified code should produce output that looks like this:

```
1   *
2   **
3   ***
4   ****
5   *****
```

(Add your code at the appropriate place.)

```java
int n = 5;

for (int row = 1; row <= n; row++)
{
    System.out.print(row + "\t");
    for (int star = 1; star <= row; star++)
        System.out.print("*");
    System.out.println();
}
```
1. What gets printed? Please show all the output as it will appear, OR indicate “NO OUTPUT”, OR show the first 3 lines of output followed by “INFINITE LOOP.”

```java
int a = 5;
do {
    System.out.println(a);
    a--;
} while (a < 5);
```

```
Output:
5
4
3...
... INFINITE LOOP
```

```java
int size = 10;
do {
    System.out.print(size + " => ");
    int category = size / 5;
    switch (category)
    {
        case 0:
            System.out.println ("S");
            break;
        case 1:
            System.out.println ("M");
            break;
        default:
            System.out.println ("L");
    }
    size = size - 2;
} while (size > 2);
```

```
Output:
10 => L
8 => M
6 => M
4 => S
```

```java
for (int a = 1; a < 3; a++)
    for (int b = 4; b <= 6; b++)
        System.out.println(a + " " + b);
```

```
Output:
1 4
1 5
1 6
2 4
2 5
2 6
```

(*** one more question on back ***)
2. Suppose your code has already calculated the value of num as the number of dimes to give out as change and now you need to display this result with an output statement such as:

```
System.out.println ("Your change is " + num + "Dimes");
```

Rewrite the above output statement using the **conditional operator**, so that in the case where num equals 1 it prints “1Dime” instead of “1 Dimes” (i.e, use the correct grammar for plural).

```
System.out.println ("Your change is "
+ num
+ "Dime"
+ (num != 1? "s" : ")");
```