

SECTION 2: Guess the Output

Snippet 1:

```
public class NestedLoopOutput {  
    public static void main(String[] args) {  
        for (int i = 1; i <= 3; i++) {  
            for (int j = 1; j <= 2; j++) {  
                System.out.print(i + " " + j + " ");  
            }  
            System.out.println();  
        }  
    }  
}
```

// Guess the output of this nested loop.

Output :

1 1 1 2

2 1 2 2

3 1 3 2

Day Run

i	i ≤ 3	j	j ≤ 2	print(i+j)	j++	i++
1	1 ≤ 3 ✓	1	1 ≤ 2 ✓	1 1	2	
		2	2 ≤ 2 ✓	1 2	3	
		3	3 ≤ 2 ✗			2
2	2 ≤ 3 ✓	1	1 ≤ 2 ✓	2 1	2	
		2	2 ≤ 2 ✓	2 2	3	
		3	3 ≤ 2 ✗			3
3	3 ≤ 3 ✓	1	1 ≤ 2 ✓	3 1	2	
		2	2 ≤ 2 ✓	3 2	3	
		3	3 ≤ 2 ✗			4
4	4 ≤ 3 ✗					

Snippet 2:

```
public class DecrementingLoop {
    public static void main(String[] args) {
        int total = 0;
        for (int i = 5; i > 0; i--) {
            total += i;
            if (i == 3)
                continue;
            total -= 1;
        }
        System.out.println(total);
    }
}

// Guess the output of this loop.
// output : 11
```

i	i > 0	total += i	if(i == 3)	total -= 1	count
5	5 > 0 ✓	0 + 5 = 5	5 == 3 ✗	5 - 1 = 4	4
4	4 > 0 ✓	5 + 4 = 9	9 == 3 ✗	9 - 1 = 8	3
3	3 > 0 ✓	8 + 3 = 11	11 == 3 ✗	11 - 1 = 10	2
2	2 > 0 ✓	10 + 2 = 12	12 == 3 ✗	12 - 1 = 11	1
1	1 > 0 ✓	11 + 1 = 12	12 == 3 ✗	12 - 1 = 11	0
0	0 > 0 ✗				

Snippet 3:

```
public class WhileLoopBreak {
    public static void main(String[] args) {
        int count = 0;
        while (count < 5) {
            System.out.print(count + " ");
            count++;
            if (count == 3)
                break;
        }
        System.out.println(count);
    }
}
```

// Guess the output of this while loop.

Output : 0 1 2 3

Snippet 3 count = 0 1 2 3

count < 5	print(count)	count++	(count == 3) ? break
0 < 5 ✓	0	1	(1 == 3) ✗
1 < 5 ✓	1	2	(2 == 3) ✗
2 < 5 ✓	2	3	(3 == 3)

Snippet 4:

```
public class DoWhileLoop {
    public static void main(String[] args) {
        int i = 1;
        do {
            System.out.print(i + " ");
            i++;
        } while (i < 5);
        System.out.println(i);
    }
}
```

// Guess the output of this do-while loop.

Output: 1 2 3 4 5

Snippet 4

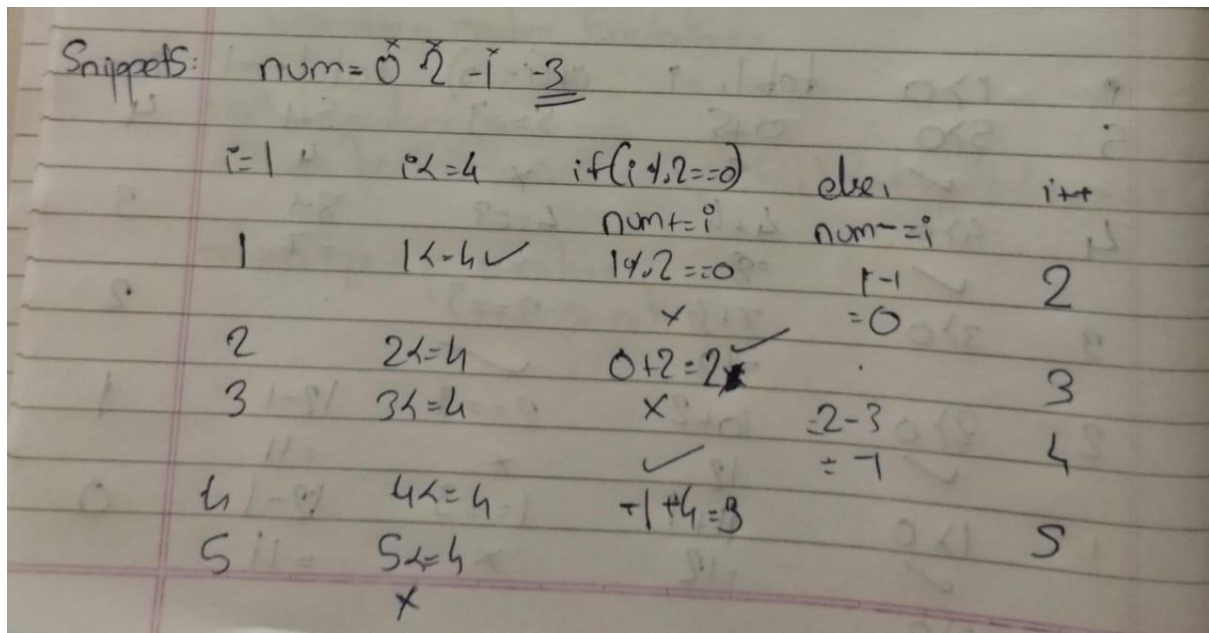
i = 1	print(i)	i++	(i < 5)
1	1	2	2 < 5 ✓
2	2	3	3 < 5 ✓
3	3	4	4 < 5 ✓
4	4	5	5 < 5 ✗
<u>i = 5</u>			

Snippet 5:

```
public class ConditionalLoopOutput {
    public static void main(String[] args) {
        int num = 1;
        for (int i = 1; i <= 4; i++) {
            if (i % 2 == 0) {
                num += i;
            } else {
                num -= i;
            }
        }
        System.out.println(num);
    }
}
```

// Guess the output of this loop.

Output: 3



Snippet 6:

```
public class IncrementDecrement {
    public static void main(String[] args) {
        int x = 5;
        int y = ++x - x-- + --x + x++;
        System.out.println(y);
    }
}
```

// Guess the output of this code snippet.

Output: 8

Snippet = 6 X

$$\begin{aligned}
 Y &= ++X - X-- + --X + X++ \\
 &= 6 - 6 \\
 &= 0 + 4 + 4 \\
 &= 8
 \end{aligned}$$

Snippet 7:

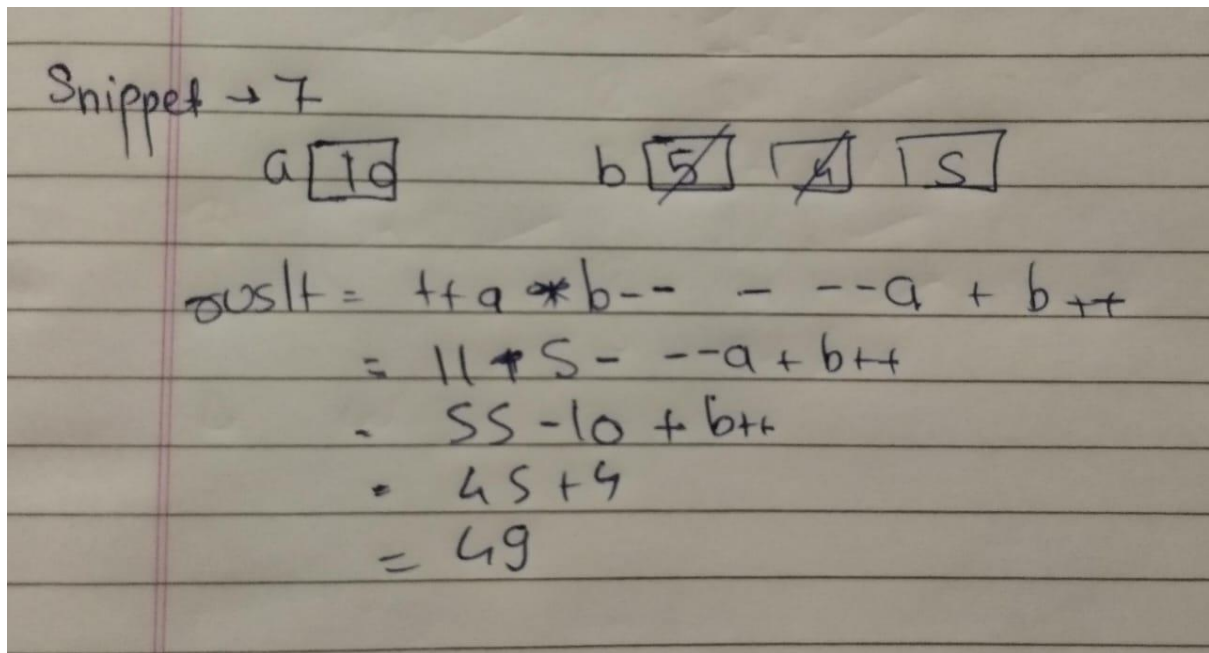
```

public class NestedIncrement {
    public static void main(String[] args) {
        int a = 10;
        int b = 5;
        int result = ++a * b-- --a + b++;
        System.out.println(result);
    }
}

```

// Guess the output of this code snippet.

Output: 49



Snippet 8:

```

public class LoopIncrement {
    public static void main(String[] args) {
        int count = 0;
        for (int i = 0; i < 4; i++) {
            count += i++ - ++i;
        }
        System.out.println(count);
    }
}

```

// Guess the output of this code snippet.

Output: -4

Snippet → 8

count ~~0~~ 1-2

~~0~~ ~~1~~ ~~2~~ ~~3~~ ~~4~~ 5

$i = 0$

$i < 4$

$count = count + i++ - ++i$

$i++$

0

✓

$= 0 + 0 - 2$

3

$= -2$

3

✓

$= -2 + 3 - 5$

6

$= -4$

6

x