

# Java Loops II



We use the integers  $a$ ,  $b$ , and  $n$  to create the following series:

$$(a + 2^0 \cdot b), (a + 2^0 \cdot b + 2^1 \cdot b), \dots, (a + 2^0 \cdot b + 2^1 \cdot b + \dots + 2^{n-1} \cdot b)$$

You are given  $q$  queries in the form of  $a$ ,  $b$ , and  $n$ . For each query, print the series corresponding to the given  $a$ ,  $b$ , and  $n$  values as a single line of  $n$  space-separated integers.

## Input Format

The first line contains an integer,  $q$ , denoting the number of queries.

Each line  $i$  of the  $q$  subsequent lines contains three space-separated integers describing the respective  $a_i$ ,  $b_i$ , and  $n_i$  values for that query.

## Constraints

- $0 \leq q \leq 500$
- $0 \leq a, b \leq 50$
- $1 \leq n \leq 15$

## Output Format

For each query, print the corresponding series on a new line. Each series must be printed in order as a single line of  $n$  space-separated integers.

## Sample Input

```
2
0 2 10
5 3 5
```

## Sample Output

```
2 6 14 30 62 126 254 510 1022 2046
8 14 26 50 98
```

## Explanation

We have two queries:

1. We use  $a = 0$ ,  $b = 2$ , and  $n = 10$  to produce some series  $s_0, s_1, \dots, s_{n-1}$ :

- $s_0 = 0 + 1 \cdot 2 = 2$
- $s_1 = 0 + 1 \cdot 2 + 2 \cdot 2 = 6$
- $s_2 = 0 + 1 \cdot 2 + 2 \cdot 2 + 4 \cdot 2 = 14$

... and so on.

Once we hit  $n = 10$ , we print the first ten terms as a single line of space-separated integers.

2. We use  $a = 5$ ,  $b = 3$ , and  $n = 5$  to produce some series  $s_0, s_1, \dots, s_{n-1}$ :

- $s_0 = 5 + 1 \cdot 3 = 8$
- $s_1 = 5 + 1 \cdot 3 + 2 \cdot 3 = 14$
- $s_2 = 5 + 1 \cdot 3 + 2 \cdot 3 + 4 \cdot 3 = 26$

- $s_3 = 5 + 1 \cdot 3 + 2 \cdot 3 + 4 \cdot 3 + 8 \cdot 3 = 50$

- $s_4 = 5 + 1 \cdot 3 + 2 \cdot 3 + 4 \cdot 3 + 8 \cdot 3 + 16 \cdot 3 = 98$

We then print each element of our series as a single line of space-separated values.