

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.