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

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

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

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```
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 $s_0, s_1, \ldots, s_{n-1}$:

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

   ... 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 $s_0, \ldots, s_{n-1}$:

Explanation

We have two queries:

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

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   ... 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 $s_0, s_1, \ldots, s_{n-1}$:

   - $s_0 = 5 + 1 \cdot 3 = 8$
   - $s_1 = 5 + 1 \cdot 3 + 2 \cdot 3 = 14$
   - $s_2 = 5 + 1 \cdot 3 + 2 \cdot 3 + 4 \cdot 3 = 26$
   - $s_3 = 5 + 1 \cdot 3 + 2 \cdot 3 + 4 \cdot 3 + 8 \cdot 3 = 50$
   - $s_4 = 5 + 1 \cdot 3 + 2 \cdot 3 + 4 \cdot 3 + 8 \cdot 3 + 16 \cdot 3 = 98$

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