

Question - 4. We use the integers a , b , and n to create the following series:

$(a+20$

$.b), (a+20$

$.b+21$

$.b), \dots, (a+20$

$.b+21$

$.b+ \dots + 2n-1$

$.b)$

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} :

$$o \ s_0 = 0 + 1.2 = 2$$

$$o \ s_1 = 0 + 1.2 + 2.2 = 6$$

$$o \ s_2 = 0 + 1.2 + 2.2 + 4.2 = 14$$

... 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} :

$$o \ s_0 = 5 + 1.3 = 8$$

$$o \ s_1 = 5 + 1.3 + 2.3 = 14$$

$$o \ s_2 = 5 + 1.3 + 2.3 + 4.3 = 26$$

$$o \ s_3 = 5 + 1.3 + 2.3 + 4.3 + 8.3 = 50$$

$$o \ s_4 = 5 + 1.3 + 2.3 + 4.3 + 8.3 + 16.3 = 98$$

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

Coding:

```
import java.util.Scanner;

class solution {

    public static void main(String[] args){

        Scanner s = new Scanner(System.in);

        int q=s.nextInt();

        for(int i=0;i<q;i++){

            int a = s.nextInt();

            int b = s.nextInt();

            int n = s.nextInt();

            int sum = a;

            for(int j=0;j<n;j++){

                sum += Math.pow(2, j) * b;

                System.out.print(sum + " ");

            }

            System.out.println();

        }

        s.close();

    }

}
```

Output:

```
E:\javacode.java\8-10-2024>javac solution.java
```

```
E:\javacode.java\8-10-2024>java solution
```

```
2
```

```
0 2 10
```

```
2 6 14 30 62 126 254 510 1022 2046
```