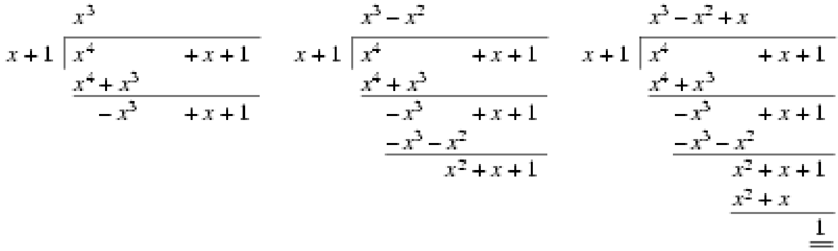
Given the polynomial

$$a(x) = a_n x^n + \ldots + a_1 x + a_0,$$

compute the remainder $r(x)$ when $a(x)$ is divided by $x^k + 1$.



Input

The input consists of a number of cases. The first line of each case specifies the two integers n and k ($0 \le n, k \le 10000$). The next $n+1$ integers give the coefficients of $a(x)$, starting from a_0 and ending with a_n. The input is terminated if $n = k = -1$.

Output

For each case, output the coefficients of the remainder on one line, starting from the constant coefficient r_0. If the remainder is 0, print only the constant coefficient. Otherwise, print only the first $d + 1$ coefficients for a remainder of degree d. Separate the coefficients by a single space.

You may assume that the coefficients of the remainder can be represented by 32-bit integers.

Sample Input

```
5 2
6 3 3 2 0 1
5 2
0 0 3 2 0 1
4 1
1 4 1 1 1
6 3
2 3 -3 4 1 0 1
1 0
5 1
0 0
7
3 5
1 2 3 4
-1 -1
```

Sample Output

```
3 2
-3 -1
-2
-1 2 -3
0
0
1 2 3 4
```