Problem I. Accounting Numeral System

Input file:	stdin
Output file:	stdout
Time limit:	1 second
Memory limit:	256 megabytes

The latest Accounting Numeral System is the top accounting system in the whole world. Its creator, Dr. Ceizenpok, is the best expert of the respective authority. Any positive integer n in this system based m is represented as a sum of m parts:

$$n = C_{x_m}^m + C_{x_{m-1}}^{m-1} + C_{x_{m-2}}^{m-2} + \ldots + C_{x_1}^1,$$

while $x_1, x_2, \ldots, x_m$ — are such integers that $0 \le x_1 < x_2 < \ldots < x_m$. Numbers $C_k^m = \frac{k!}{m!\,(k-m)!}$ our experts call accounting indexes. Each number n in this system is recorded as $n = \overline{(x_m)\ldots(x_2)(x_1)}$, and it is considered that $0! = 1$ and $C_k^m = 0$, if $m > k$. For example, number 9 in the accounting system based 3 is recorded as $(\mathbf{4})(\mathbf{3})(\mathbf{2})$, because $9 = C_{\mathbf{4}}^3 + C_{\mathbf{3}}^2 + C_{\mathbf{2}}^1$, and number 1 in this system based 2 looks like:$(\mathbf{2})(\mathbf{0})$, because $1 = C_{\mathbf{2}}^2 + C_{\mathbf{0}}^1$.

You have to find a representation of an integer n in the accounting numeral system based m.

Input

Single line contains two integers n and m ($1 \le n \le 10^{16}$, $2 \le m \le 1\,000$).

Output

Single line should contain a sequence of m space-separated integers $x_m, \ldots, x_2, x_1$, that form a number designation n in the accounting numeral system. Number x_m is the leftmost digit in the number designation n, and x_1 — its rightmost one.

Examples

stdin	stdout
9 3	4 3 2
5 2	3 2