Problem E: Easy Equation

Time limit: 1 s
Memory limit: 512 MiB

Given an integer k greater than 1, it is possible to prove that there are infinitely many triples of positive integers (a, b, c) that satisfy the following equation:

$$a^2 + b^2 + c^2 = k\,(ab + bc + ca) + 1.$$

Given positive integers n and k, find n arbitrary triples (a_1, b_1, c_1), (a_2, b_2, c_2), $\ldots$, (a_n, b_n, c_n) that all satisfy the equation. Furthermore, all $3n$ integers $a_1, \ldots, a_n, b_1, \ldots, b_n, c_1, \ldots, c_n$ should be different positive integers with at most 100 decimal digits each.

Input

The first line contains two integers k and n ($2 \leq k \leq 1\,000, 1 \leq n \leq 1\,000$) — the constant k in the equation and the target number of triples.

Output

Output n lines. The i-th line should contain three space separated integers a_i, b_i and c_i with at most 100 digits each — the i-th of the solutions you found.

Example

input

```
2 8
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output

```
1 2 6
3 10 24
12 35 88
15 28 84
4 5 18
14 33 90
40 104 273
21 60 152
```

input

```
3 3
```

output

```
1 3 12
8 21 87
44 165 615
```