B. Kyoya and Permutation

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Let's define the permutation of length n as an array $p = [p_1, p_2, ..., p_n]$ consisting of n distinct integers from range from 1 to n. We say that this permutation maps value1 into the value p_1, value 2 into the value p_2 and so on.

Kyota Ootori has just learned about *cyclic representation* of a permutation. A *cycle* is a sequence of numbers such that each element of this sequence is being mapped into the next element of this sequence (and the last element of the cycle is being mapped into the first element of the cycle). The *cyclic representation* is a representation of p as a collection of cycles forming p. For example, permutation $p = [4, 1, 6, 2, 5, 3]$ has a *cyclic representation* that looks like $(142)(36)(5)$ because 1 is replaced by 4, 4 is replaced by 2, 2 is replaced by 1, 3 and 6 are swapped, and 5 remains in place.

Permutation may have several cyclic representations, so Kyoya defines the *standard cyclic representation* of a permutation as follows. First, reorder the elements within each cycle so the largest element is first. Then, reorder all of the cycles so they are sorted by their first element. For our example above, the *standard cyclic representation* of $[4, 1, 6, 2, 5, 3]$ is $(421)(5)(63)$.

Now, Kyoya notices that if we drop the parenthesis in the standard cyclic representation, we get another permutation! For instance, $[4, 1, 6, 2, 5, 3]$ will become $[4, 2, 1, 5, 6, 3]$.

Kyoya notices that some permutations don't change after applying operation described above at all. He wrote all permutations of length n that do not change in a list in lexicographic order. Unfortunately, his friend Tamaki Suoh lost this list. Kyoya wishes to reproduce the list and he needs your help. Given the integers n and k, print the permutation that was k-th on Kyoya's list.

Input

The first line will contain two integers n, k ($1 \le n \le 50$, $1 \le k \le min\{10^{18}, l\}$ where l is the length of the Kyoya's list).

Output

Print n space-separated integers, representing the permutation that is the answer for the question.

Examples

input
```
4 3
```
output
```
1 3 2 4
```

input
```
10 1
```
output
```
1 2 3 4 5 6 7 8 9 10
```

Note

The standard cycle representation is $(1)(32)(4)$, which after removing parenthesis gives us the original permutation. The first permutation on the list would be $[1, 2, 3, 4]$, while the second permutation would be $[1, 2, 4, 3]$.