**Duplication**

A sequence of natural numbers begins with the number 1 and is performed N-1 transformations "double" of the sequence (including only 2 numbers 0 and 1) as follows:   
For the sequence a[i - 1] , the new sequence a[i] (with i > 1) has the form a[i - 1], x ,a[i - 1] (if i is even x = 1, otherwise x = 0) . Strings A starting with a[1] = 0.  
For example, with 4 transform steps, we have:  
a[1] = [0]  
a[2] = [0 1 0]  
a[3] = [0 1 0 0 0 1 0]  
a[4] = [0 1 0 0 0 1 0 1 0 1 0 0 0 1 0]  
…  
a[n] = [ . . . ]  
What is the Kth number in the last sequence?

**Input:**

* Each test consists of a positive integer N and K (1 ≤ N ≤ 50, 1 ≤ K ≤ 2N - 1).

**Output:**

* Print the answer on one line.

|  |  |
| --- | --- |
| **Input** | **Output** |
| 4 5 | 0 |
| 50 1 | 0 |

*Explanation of test 1: The resulting sequence of numbers is [0 1 0 0 0 1 0 1 0 1 0 0 0 1 0…].*

*Explanation of test 2: The resulting sequence is [0. . . .].*