Growing Sequences

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1 second
Memory limit:	512 mebibytes

In scientific research, exponentially growing sequences appear quite often. Some researches are especially interested in integer arrays of length n where each element is at least twice as large as the previous one: formally, $2 \cdot a_i \le a_{i+1}$ for $1 \le i \le n-1$. They want to calculate the number of different bounded arrays satisfying this condition.

Help them! Count the number of such arrays consisting of integers from 1 to c. Since this number can be very large, you should output it modulo 998 244 353.

Input

The only line contains two integers n and c ($1 \le n \le 60$; $1 \le c \le 10^{18}$): the length of the arrays and the maximum value of their elements.

Output

Output the number of different arrays modulo 998 244 353.

Examples

standard input	*standard output*
1 5	5
3 6	4
15 179	0
35 1234567887654321	576695683

Note

In the first example, there are 5 different arrays: [1], [2], [3], [4], [5].

In the second example, there are 4 different arrays: $[1, 2, 4]$, $[1, 2, 5]$, $[1, 2, 6]$, $[1, 3, 6]$.

In the third example, there are no arrays satisfying the conditions.