

A Animal Attire

Time limit: 1s

The Coati Queen has decided to make the animal parade a recurring tradition, to be held n more times during her reign. The tradition will now require all participants to wear a different outfit for each occurrence of the parade. An outfit consists of exactly k types of clothing. For each type, there can be many different individual clothing items. Each clothing item is of exactly one type. Two outfits are different, if they have a different item in at least one type of clothing.



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Adélie the Penguin has decided she will be smart about it, and buy all the items upfront to receive a good discount. What is the least total number of different clothing items she needs to own?

As an example, consider the second sample input. The outfits consist of 3 types of clothing: for example, a shirt, a pair of trousers, and a hat. To make the 8 different outfits that she requires, Adélie can make combinations of 2 differently patterned shirts, 2 differently coloured pairs of trousers, and 2 different hats, for a total of 6 clothing items.

Input

The input consists of:

- One line with two integers k and n ($1 \leq k \leq 100$, $1 \leq n \leq 10^{12}$), the number of different types of clothing and the number of upcoming parades.

Output

Output the least total number of different clothing items Adélie needs to own, in order to wear a different outfit for each of the upcoming parades.

Sample Input 1	Sample Output 1
2 4	4
Sample Input 2	Sample Output 2
3 8	6
Sample Input 3	Sample Output 3
4 30	10