

El Hotel con Habitaciones Infinitas

HaluaRuti city has a strange hotel with infinite rooms. The groups that come to the hotel follow the following rules:

- a) At the same time, only members of a group can rent the hotel.
- b) Each group arrives in the morning one day and out the evening of another day.
- c) Another group arrives in the morning after a group left the hotel.
- d) A very important feature of a group that arrives is to have a member more than the previous group unless it is the first group. You will have the number of members of the original group.
- e) A group with n members stay for n days in the hotel. For example, if a group of four members arrive on August 1 in the morning, this will leave the hotel on August 4 night and the next group of five members arrive on Aug. 5 in the morning and go on 5 days and so on. Given an initial group size you should find the size of the group is in the hotel on a specific day.

[SPANISH VERSION](#)

Input

The input contains integers S ($1 \leq S \leq 10000$) and D ($1 \leq D \leq 1015$) in each line. S denotes the initial size of the group and D denotes the day for which you must find the size of the group at the hotel, D -th day (starting from 1). All integers input and output are lower than 1015. A group size S means that on the first day a group of S members came to the hotel and stay for S days, then come a group of $S + 1$ members according to the rules described above.

Output

For each line of input, print in a line the size of the group at the hotel in the D -th day.

Example

Input:

1 6

3 10

3 14

Output:

3

5

6