

10648 Chocolate Box

Recently one of my friend Tarik became a member of the food committee of an ACM regional competition. He has been given m distinguishable boxes, he has to put n types of chocolates in the boxes. The probability that one chocolate is placed in a certain box is $1/m$. What is the probability that one or more boxes are empty?

At first he thought it as an easy task. But soon he found that it was much harder. So, he falls into a great trouble and asked you to help him in this task.

Input

Each line of the input contains two integers n indicating total number of distinguishable types of chocolate and m indicating total number of distinguishable boxes ($m \leq n < 100$). A single line containing '-1' denotes the end.

Output

For each of the cases you should calculate the probability corrected to seven decimal places. The output format is shown below.

Sample Input

```
50 12
50 12
-1
```

Sample Output

```
Case 1: 0.1476651
Case 2: 0.1476651
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