

Some people believe that 13 is an unlucky number. So they always want to avoid the number 13. In some buildings you will find that there is no 13-th floor. After 12-th floor there is 14-th floor. In a number if there is no 13 (i.e. no “1” is followed by a “3”) then we may call it a super lucky number. For example, 12345 is a super lucky number. But if any number contains 13 then it is not a super lucky number such as 13254 or 21345. Given the number of digits N in a number and a base B , you have to find out how many super lucky numbers are possible with N digits in the base B . B should be greater than 3, as because the digit 3 is present in only for base 4 or more. Note that leading 0s are not significant. So, 011 is not a valid three digit number.

Input

There will be several lines in the input each containing two positive integers B and N , where $4 \leq B \leq 128$ and $N \leq 100$. A pair of zero will indicate the end of input and it should not be processed.

Output

For each line in the input print the count of super lucky numbers of N digits in the base B .

Sample Input

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4 2
5 3
0 0
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Sample Output

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11
91
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