

C

K-Multiple Free Set

Input: Standard Input
Output: Standard Output

A k-multiple free set is a set of integers where there is no pair of integers where one is equal to another integer multiplied by k. For example for k=2 {1,3,4} is a valid set. but not {2,4,5}. as 4 is double of 2.

You will be given n and k. you have to determine the largest k-multiple free subset of the integers from 1 to n.

Input

First line of the input contains T ($1 \leq T \leq 1000$) the number of test case. Then following lines contains T Test cases. Each case contains a line containing 2 integers n ($1 \leq n \leq 1000000000$) and k ($2 \leq k \leq 100$).

Output

For each test case output contains 1 integer the size of the largest k-multiple free subset of the integers from 1 to n.

Sample Input

```
3
10 2
100 2
1000 2
```

Output for Sample Input

```
6
67
666
```

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Special Thanks: Shahriar Manzoor