

# Count Zero

Count the zero at the end of  $N!$  when represented in base  $b$ .

## INPUT

the first line is the number  $T$  ( $1 \leq T \leq 10^5$ )

the  $i$ th line in the  $T$  line Followed by two positive integers  $N$  ( $1 \leq N \leq 10^{18}$ ),  $b$  ( $2 \leq b \leq 10^6$ )

## Output

Consists of  $T$  lines, the  $i$ th line is the result of the test  $i$

## Example

**Input:**

```
6
3 7
5 2
10 3
10 9
1000 2
1000 30
```

**Output:**

```
0
3
4
2
994
249
```