# Order of Prime in Factorial

For a given prime $p$, define $\mathrm{ord}_p(k)$ as the multiplicity of $p$ in $k$, i.e. the number of times $p$ appears in the prime factorization of $k$.

For a given $p$ (prime) and $L$, let $F(p, L)$ be the number of integers $n$ such that $1 \le n \le L$ and $\mathrm{ord}_p(n!)$ is divisible by $p$. Here $n!$ denotes the factorial of $n$.

Your job is to calculate $F(p, L)$ given $p$ and $L$.

**Input Format**

The first line contains the number of test cases $T$.
Each of the next $T$ lines contains two integers $p$ and $L$ separated by a space.

**Output Format**

For each test case, output one line containing $F(p, L)$.

**Constraints**
$1 \le T \le 100000$
$2 \le p \le 10^{18}$
$1 \le L \le 10^{18}$
$p$ is prime

**Sample input**

```
2
2 6
3 6
```

**Sample Output**

```
2
2
```

**Explanation**
Here are the first 6 factorials: 1, 2, 6, 24, 120, 720.

The multiplicities of 2 in these numbers are: 0, 1, 1, 3, 3, 4.
Exactly two of these are divisible by 2 (0 and 4), so $F(2, 6) = 2$.

The multiplicities of 3 in these numbers are: 0, 0, 1, 1, 1, 2.
Exactly two of these are divisible by 3 (0 and 0), so $F(3, 6) = 2$.