
3. Exponents

Program Name: Exponents.java

Input File: exponents.dat

Many codes are developed that use prime numbers and powers of prime numbers. For this problem, you will be given a prime number and a second number which is a power of that prime number. You are to write a program to find what power of the first number that the second number is.

Input

Each line of input will contain two integers separated by a space. The first integer is a prime number n , where $1 < n < 20$, and the second integer is n^p , where $0 < p < 15$.

Output

For each line of input, you will print one line of output that contains the value of p , the power to which n is raised.

Example Input File

```
2 16
3 243
11 3138428376721
```

Example Output to Screen

```
4
5
12
```