

# Help Balaji!

Balaji was reading number theory. When reading about primes, he was thinking about numbers which could be expressed as a product of primes. He wanted to know the largest number in a range which could be expressed as a product of primes. Balaji's maths teacher is not so good at maths and so he was taught that 1 is prime. You, being a good programmer, help him with the task.

## Input

The first line of input consists of  $C$ , the number of test cases, followed by  $C$  lines containing two space separated numbers  $a$  and  $b$ , the first and last number in the range (inclusive).

$$1 < C < 100$$

$$0 < A < B < 1e12$$

$$0 < B - A < 1e6$$

## Output

For each test case, print a single line containing the largest number which can be represented as a product of primes, considering 1 to be prime.

## Example

**Input:**

1  
1 4

**Output:**

4

## Explanation of Test Case

4 can be expressed as  $2 \times 2$ .