Consider two non-negative long integers, a and b, where $a \leq b$. The bitwise AND of all long integers in the inclusive range between a and b can be expressed as $a \ \& \ (a+1) \ \& \ \ldots \ \& \ (b-1) \ \& \ b$, where $\&$ is the bitwise AND operator.

Given n pairs of long integers, $a[i]$ and $b[i]$, compute and print the bitwise AND of all natural numbers in the inclusive range between $a[i]$ and $b[i]$.

For example, if $a = 10$ and $b = 14$, the calculation is $10 \ \& \ 11 \ \& \ 12 \ \& \ 13 \ \& \ 14 = 8$.

Function Description

Complete the *andProduct* in the editor below. It should return the computed value as an integer.

andProduct has the following parameter(s):

- *a*: an integer
- *b*: an integer

Input Format

The first line contains a single integer n, the number of intervals to test.
Each of the next n lines contains two space-separated integers $a[i]$ and $b[i]$.

Constraints

- $1 \leq n \leq 200$
- $0 \leq a[i] \leq b[i] < 2^{32}$

Output Format

For each pair of long integers, print the bitwise AND of all numbers in the inclusive range between $a[i]$ and $b[i]$ on a new line.

Sample Input 0

```
3
12 15
2 3
8 13
```

Sample Output 0

```
12
2
8
```

Explanation 0

There are three pairs to compute results for:

1. $a = 12$ and $b = 15$
   $12 \ \& \ 13 \ \& \ 14 \ \& \ 15 \ = 12$, so we print 12 on a new line.
2. $a = 2$ and $b = 3$
   $2 \ \& \ 3 \ = 2$
3. $a = 8$ and $b = 13$
   $8 \ \& \ 9 \ \& \ 10 \ \& \ 11 \ \& \ 12 \ \& \ 13 \ = 8$

Sample Input 1

```
2
17 23
11 15
```

Sample Output 1

```
16
```

8