Maximizing XOR

Given two integers, l and r, find the maximal value of a xor b, written $a \oplus b$, where a and b satisfy the following condition:

$$l \leq a \leq b \leq r$$

For example, if $l = 11$ and $r = 12$, then
$11 \oplus 11 = 0$
$11 \oplus 12 = 7$
$12 \oplus 12 = 0$

Our maximum value is 7.

Function Description

Complete the *maximizingXor* function in the editor below. It must return an integer representing the maximum value calculated.

maximizingXor has the following parameter(s):

- *l*: an integer, the lower bound, inclusive
- *r*: an integer, the upper bound, inclusive

Input Format

The first line contains the integer l.
The second line contains the integer r.

Constraints

$$1 \leq l \leq r \leq 10^3$$

Output Format

Return the maximal value of the xor operations for all permutations of the integers from l to r, inclusive.

Sample Input 0

```
10
15
```

Sample Output 0

```
7
```

Explanation 0

Here $l = 10$ and $r = 15$. Testing all pairs:

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$10 \oplus 10 = 0$
$10 \oplus 11 = 1$
$10 \oplus 12 = 6$
$10 \oplus 13 = 7$
$10 \oplus 14 = 4$
$10 \oplus 15 = 5$
$11 \oplus 11 = 0$
$11 \oplus 12 = 7$
$11 \oplus 13 = 6$
$11 \oplus 14 = 5$
$11 \oplus 15 = 4$
$12 \oplus 12 = 0$
$12 \oplus 13 = 1$
$12 \oplus 14 = 2$
$12 \oplus 15 = 3$
$13 \oplus 13 = 0$
$13 \oplus 14 = 3$
$13 \oplus 15 = 2$
$14 \oplus 14 = 0$
$14 \oplus 15 = 1$
$15 \oplus 15 = 0$

Two pairs, *(10, 13)* and *(11, 12)* have the xor value *7*, and this is maximal.

Sample Input 1

```
11
100
```

Sample Output 1

```
127
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