

Maximizing XOR

Given two integers, l and r , find the maximal value of $a \text{ xor } b$, 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:

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

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