

Maximizing XOR



Problem Statement

Given two integers, L and R , find the maximal values of $A \text{ xor } B$, where A and B satisfy the following condition:

$$L \leq A \leq B \leq R$$

Input Format

The input contains two lines; L is present in the first line and R in the second line.

Constraints

$$1 \leq L \leq R \leq 10^3$$

Output Format

The maximal value as mentioned in the problem statement.

Sample Input

```
10
15
```

Sample Output

```
7
```

Explanation

The input tells us that $L = 10$ and $R = 15$. All the pairs which comply to above condition are the following:

$$10 \oplus 10 = 0$$

$$10 \oplus 11 = 1$$

$$10 \oplus 12 = 6$$

$$10 \oplus 13 = 7$$

$$10 \oplus 14 = 4$$

$$10 \oplus 15 = 5$$

$$11 \oplus 11 = 0$$

$$11 \oplus 12 = 7$$

$$11 \oplus 13 = 6$$

$$11 \oplus 14 = 5$$

$$11 \oplus 15 = 4$$

$$12 \oplus 12 = 0$$

$$12 \oplus 13 = 1$$

$$12 \oplus 14 = 2$$

$$12 \oplus 15 = 3$$

$$13 \oplus 13 = 0$$

$$13 \oplus 14 = 3$$

$$13 \oplus 15 = 2$$

$$14 \oplus 14 = 0$$

$$14 \oplus 15 = 1$$

$$15 \oplus 15 = 0$$

Here two pairs $(10, 13)$ and $(11, 12)$ have maximum xor value 7, and this is the answer.