CP #34: Bit Mask

In bit-wise expression, mask is a common term. You can get a certain bit-pattern using mask. For example, if you want to make first 4 bits of a 32-bit number zero, you can use 0xFFFFFFF0 as mask and perform a bit-wise AND operation. Here you have to find such a bit-mask.

Consider you are given a 32-bit unsigned integer N. You have to find a mask M such that L ≤ M ≤ U and N OR M is maximum. For example, if N is 100 and L = 50, U = 60 then M will be 59 and N OR M will be 127 which is maximum. If several value of M satisfies the same criteria then you have to print the minimum value of M.

Input Format

Each input starts with 3 unsigned integers N, L, U where L ≤ U. Input is terminated by EOF.

Output Format

For each input, print in a line the minimum value of M, which makes N OR M maximum.

Look, a brute force solution may not end within the time limit.

Sample Input 0

```
100 50 60
100 50 50
100 0 100
1 0 100
15 1 15
```

Sample Output 0

```
59
50
27
100
1
```