Mixing in base 2 P42672_en

Given a natural number $x > 0$ with n bits, we denote with $x_{n-1} \dots x_0$ its representation in base 2. For example, $x = 8$ in base 2 is 1000, so $x_3 = 1$ and $x_2 = x_1 = x_0 = 0$.

Write a program to mix the base 2 representations of two given natural numbers x and y with the same number of bits n. That is, print $x_{n-1}y_{n-1} \dots x_0y_0$.

Input

Input consists of several cases, each with two natural numbers with the same number of bits, between 1 and 30.

Output

For every case, print the mixing of the representations in base 2 of the two numbers.

Sample input 1

```
8 15
1 1
2 3
1000 600
900000 1000000
```

Sample output 1

```
11010101
11
1101
11101011100111000000
11110111100110101000111010011000000000000
```

Problem information

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