BitPlay69

You are given 2 integers **N** and **M**.

Print the smallest **K**, such that **N⊕K>M**. Here, **⊕ is the Bitwise XOR Operator.**

Input

The first line contains a single integer T(1≤T≤100) - The number of test cases.

The first and only line of each test case contains 2 integers N and M ($1≤N,M≤10^{17}$)

Output

A single Integer - **K**.

Example:

Input:

4

3 5

3 2

69 696

696 96

Output:

4

0

640

0