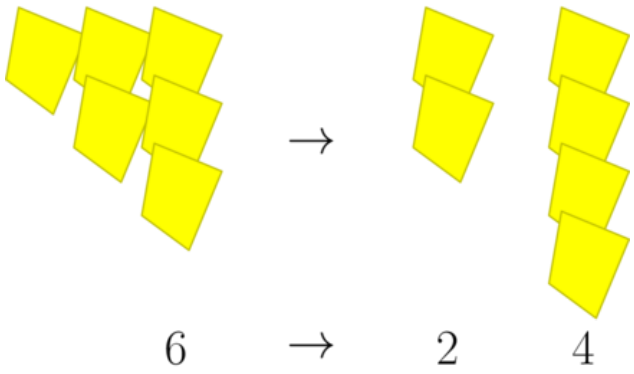
Yellow Jellybean Jars

Problem ID: b

Time Limit: 1 second
Memory Limit: 256 MB

You are initially given a single jar containing n yellow jellybeans. In each operation, you can perform the following: Take any jar and split it into two jars, where one of the resulting jars has exactly twice as many jellybeans as the other. All jars must contain an integer number of jellybeans.



Can you make a jar with exactly m yellow jellybeans using zero or more operations?

Input

The first line contains an integer t $(1 \leq t \leq 1,000)$ — the number of test cases.

The only line of each test case contains two integers n and m $(1 \leq n, m \leq 10^7)$ — the starting jar size (n) and the target jar size (m), respectively.

Output

For each test case, output "YES" if you can make a jar of size exactly m and "NO" otherwise.

Sample Input 1	Sample Output 1
11 6 4 9 4 4 2 18 27 27 4 27 2 27 10 1 1 3 1 5 1 746001 2984004	YES YES NO NO YES YES NO YES YES NO NO