# Problem A: Break the Chocolate

## Description

Benjamin is going to host a party for his big promotion coming up.

Every party needs candies, chocolates and beer, and of course Benjamin has prepared some of those. But as everyone likes to party, many more people showed up than he expected. The good news is that candies are enough. And for the beer, he only needs to buy some extra cups. The only problem is the chocolate.

As Benjamin is only a 'small court officer' with poor salary even after his promotion, he can not afford to buy extra chocolate. So he decides to break the chocolate bars into smaller pieces so that everyone can have some. Each time, he can pick one piece of chocolate and break it into two pieces.

The party is coming really soon and breaking the chocolate is not an easy job. He wants to know what is the minimum number of steps to break the chocolate into unit-size pieces (size of $1 \times 1$).

## Input

The first line contains an integer $T(1 \leq T \leq 10000)$, indicating the number of test cases.

Each test case contains one line with two integers $N, M(1 \leq N, M \leq 2000)$, meaning the chocolate is of size $N \times M$.

## Output

For each test case in the input, print one line: `"Case #X: A"`, where $X$ is the test case number (starting with 1) and $A$ is the minimum numbers of steps to break the chocolate.

## Sample

| Input | Output |
|---|---|
| 2<br>1 1<br>1 3 | Case #1: 0<br>Case #2: 2 |