1275 – Internet Service Providers

A group of **N** Internet Service Provider companies (ISPs) use a private communication channel that has a maximum capacity of **C** traffic units per second. Each company transfers **T** traffic units per second through the channel and gets a profit that is directly proportional to the factor **T(C - T*N)**. The problem is to compute the smallest value of **T** that maximizes the total profit the **N** ISPs can get from using the channel. Notice that **N, C, T**, and the optimal **T** are integer numbers.

Input

Input starts with an integer **T (≤ 20)**, denoting the number of test cases.

Each case starts with a line containing two integers **N** and **C (0 ≤ N, C ≤ 10^9)**.

Output

For each case, print the case number and the minimum possible value of **T** that maximizes the total profit. The result should be an integer.

Sample Input	Output for Sample Input
6 1 0 0 1 4 3 2 8 3 27 25 1000000000	Case 1: 0 Case 2: 0 Case 3: 0 Case 4: 2 Case 5: 4 Case 6: 20000000