Problem D. Change

You currently have only a banknote/coin of A `CNY`. (`CNY` stands for Chinese yuan, or renminbi, the currency unit in People's Republic of China). You will need to pay exactly B `CNY` at some place soon. The only option you have now is to spend money at a vending machine, which has an infinite number of copies of merchandise of all possible positive prices. You have as much time as you want to use the vending machine. However, you cannot make any assumptions about the way the vending machine will make change; it is only guaranteed that it will dispense banknotes/coins that sum to the amount of change required.

What is the smallest total amount of money you will need to spend at the vending machine to make sure that you will be able to pay exactly B `CNY` later using the change? I.e. what's the smallest total amount you have to spend in the worst case, to get a banknote/coin of B `CNY`, or some smaller banknotes/coins that can combine to exactly B `CNY`?

In this problem we assume all denominations of Chinese yuan are in use, including 1 `fen` (0.01 `CNY`), 2 `fen`, 5 `fen`, 1 `jiao` (0.1 `CNY`), 2 `jiao`, 5 `jiao`, 1 `yuan` (1 `CNY`), 2 `yuan`, 5 `yuan`, 10 `yuan`, 20 `yuan`, 50 `yuan` and 100 `yuan`. These are the only possible denominations that the vending machine will accept or return.

Input

The first line of the input gives the number of test cases, T. T lines follow.

Each line contains 2 numbers A and B.

Output

For each test case, output one line containing "`Case #x: y`", where `x` is the test case number (starting from 1) and `y` is the minimum amount in `CNY` you have to spend when you have only a banknote/coin of A `CNY` and need to pay exactly B `CNY`.

Limits

- $1 \leq T \leq 78$.
- $A, B \in \{0.01, 0.02, 0.05, 0.1, 0.2, 0.5, 1, 2, 5, 10, 20, 50, 100\}$ and $A > B$.

Sample input and output

Sample Input	Sample Output
2 0.05 0.02 2 1	Case #1: 0.01 Case #2: 0.01

Note

In Case #1, the optimal solution is to buy a product that costs 1 fen. The machine might return any of the following: two 2 `fen`; one 2 `fen` and two 1 `fen`; four 1 `fen`. In all of those cases, you either have the 2 `fen` that you need, or you can combine two 1 `fen` to create the exact 2 `fen` amount.