11. Terry

Program Name: Terry.java   **Input File: terry.dat**

Inspired by White Collar, Ocean's 12, and the Rick and Morty Heist episode, Terry is looking to change careers from computer science student to international art thief. Career changes are usually hard, but because Terry joined a crew of 10 skilled thieves, the transition to a life of crime isn't as intense as it otherwise would have been.

For Terry's first heist, the syndicate has targeted the Ultimate Imaging Laboratory (UIL). The UIL is currently restoring N different paintings. At night, no one is there except an inattentive security guard, and each painting is guarded by a unique security system.

With over 200 years of combined thievery experience, your syndicate can accurately determine how much each work of art can sell for on the black market, and the probability the security system detects your intrusion, given as a percentage. These values for the paintings are denoted as V_i and P_i, respectively. For this heist to be worth your while, you need to steal at least K dollars' worth of art.

Terry decided a good way to use his skills from his past life would be to write a program to figure out which paintings to steal to minimize the probability of getting caught. He will get caught if even one alarm goes off. All alarm systems operate independently from each other. Remember, the probability of two independent events occurring is the product of the probabilities of each event happening. Can you help Terry write the program?

DISCLAIMER: The University Interscholastic League does not endorse using computing skills for breaking the law or other evil misdeeds.

Input: Input starts with a line containing an integer T ($1 \leq T \leq 20$), the number of test cases. The first line of each test case contains two integers N and K. Then follow N lines, each with integers V_i and P_i.

$1 \leq N \leq 100$
$1 \leq K, V_i \leq 10,000$
$0 \leq P_i \leq 100$

Output: For each test case, output the case number and the minimum possible percentage of getting caught while stealing at least K dollars' worth of paintings. Output the percentage rounded to exactly six decimal places. Format the output as in the samples.

Sample input
```
3
3 2
5 50
3 10
8 25
2 10
6 50
7 50
3 141
59 65
89 79
32 38
```

Sample output
```
Case #1: 10.000000
Case #2: 75.000000
Case #3: 92.650000
```

Sample Explanations:

In the first sample, if you steal any single painting, that's sufficient. To minimize the odds of getting caught, steal the painting of value 3, as the odds of getting caught are only 10%.

In the second sample, regardless of the order he decides to steal the paintings, Terry needs to steal both paintings. There is a 50% chance of getting caught on the first painting and 50% * 50% = 25% chance of getting caught on the second painting. Therefore, the overall odds of getting caught are 75%.