

Game Calculator

Description

A game is played where two armies face each other. Each turn, every unit in both armies either scores a hit or a miss. Each army then removes a number of units equal to the number of hits scored by the opposing army. The game is over when at the end of a turn, one army does not have any more units. If both armies run out of units on the same turn, the game is a draw. The probability of any one unit scoring a hit is determined at the beginning of the game and remains constant.

The goal is to determine the probability of army A winning, army B winning, or the game ending in a draw.

Example

If the probability of scoring a hit is 0.3, army A has 2 units, and army B has 1 unit, then A has a 0.86839 chance of winning, B has a 0.09213 chance of winning and there is a 0.03948 chance of a draw.

Input

The first line contains a single positive integer **T**, representing the number of test cases. **T** test cases follow. Each test case is two lines long. The first line of each test case contains a single decimal number **H**. The second line contains two positive integers **A** and **B**, representing the number of units in each army.

Limits

$$0 < H \leq 1$$

$$0 < A, B \leq 1,000,000$$

Output

For each test case, output a single line containing three decimal numbers representing the chance of A winning, B winning and ending in a draw, respectively. Each number should be rounded to exactly 5 decimal places.

Input

```
2
0.3
2 1
0.854
8 8
```

Output

```
0.86839 0.09213 0.03948
0.38532 0.38532 0.22936
```