A. Von Neumann's Fly

Source file: **`fly.{c, java, cpp}`**
Input file: **`{stdin, System.in, cin}`**
Output: **`{stdout, System.out, cout}`**

Background

The following problem was posed to John von Neumann:

Two bicyclists, **A** and **B**, start riding toward each other at the same time from places that are 250 miles apart. **A** is traveling at 10 miles per hour and **B** at 15 miles per hour. At the same time, a fly leaves the front wheel of **A**'s bicycle, and flies toward **B**'s bicycle at 20 miles per hour. As soon as he touches the front wheel of **B**'s bicycle, the fly turns around and flies back. As the bicycles approach each other, the fly continues flying back and forth, touching each front wheel in turn, until, alas, the fly is crushed between them. Since the fly travels faster than either cyclist, he makes an infinite number of trips. Yet, the fly travels a finite distance (the infinite series converges). How far did the fly travel?

Von Neumann immediately summed the infinite series (in his head!), and arrived at the correct answer: 200 miles.

You are to write a program that solves a more general version of this problem, with varying initial distances and speeds.

The Input

The first line of input contains a single integer **P**, ($1 \le \mathbf{P} \le 1000$), which is the number of data sets that follow. Each data set should be processed identically and independently.

Each data set consists of a single line containing five values: an integer **N** (the data set number), and four floating-point values: **D** (the initial distance between the bicycles in miles, $\mathbf{10 \le D \le 1000}$), A (cyclist **A**'s speed in miles per hour, $\mathbf{1 \le A \le 30}$), **B** (cyclist **B**'s speed in miles per hour, $1 \le \mathbf{B} \le 30$), and **F** (the fly's speed in miles per hour, $\mathbf{A \le B < F \le 50}$).

The Output

For each data set there is one line of output. It contains the data set number followed by a single space, followed by the number of miles traveled by the fly, (the sum of the infinite series described by the input values), accurate to two decimal places.

Sample Input

```
5
1 250 10 15 20
2 10.7 3.5 4.7 5.5
3 523.7 15.3 20.7 33.3
4 1000 30 30 50
5 500 15 15 25
```

Sample Output

```
1 200.00
2 7.18
3 484.42
4 833.33
5 416.67
```