1181 – Odd Looking Average

We are all quite familiar with finding 'average'. Let us define new kind of average of a function.

Given a function **f(x)** and two values **a** and **b (a ≤ b)** if we take all the numbers (not necessarily integers) from **a** to **b** then

$$y = \frac{Summation\ of\ f(x)(a \leq x \leq b)}{Total\ numbers\ in\ [a,b]}$$

Now for $\mathbf{f(x) = x^k}$ you are given **k**, **a** and **b**, you have to find the average according to the description.

Input

Input starts with an integer **T (≤ 400)**, denoting the number of test cases.

Each case contains an integer **k (1 ≤ k ≤ 4)** and two real numbers **a** and **b (0 < a ≤ b ≤ 10)**.

Output

For each case, print the case number and the average. Error less than $\mathbf{10^{-6}}$ will be ignored.

Sample Input	Output for Sample Input
4 1 2 2 2 2 2.0 1 2.0 4 2 2 4.0	Case 1: 2 Case 2: 4 Case 3: 3 Case 4: 9.3333333333