H • Farey Sums

Given a positive integer, ***N***, the sequence of all fractions ***a*** / ***b*** with (***0*** < ***a*** ≤ ***b***), (***1*** < ***b*** ≤ ***N***) and ***a*** and ***b*** relatively prime, listed in increasing order, is called the *Farey Sequence of order* ***N***.

For example, the *Farey Sequence of order* ***6*** is:

0/1, **1/6**, **1/5**, **1/4**, **1/3**, **2/5**, **1/2**, **3/5**, **2/3**, **3/4**, **4/5**, **5/6**, **1/1**

If the denominators of the *Farey Sequence of order* ***N*** are:

b[***1***], ***b***[***2***], …, ***b***[***K***]

then the *Farey Sum* of order ***N*** is the sum of ***b***[***i***] / ***b***[***i***+**1**] from ***i*** = **1** to ***K*** –**1.**

For example, the *Farey Sum of order* ***6*** is:

1/6 + 6/5 + 5/4 + 4/3 + 3/5 + 5/2 + 2/5 + 5/3 + 3/4 + 4/5 + 5/6 + 6/1 = 35/2

Write a program to compute the *Farey Sum of order* ***N*** (input).

Input

The first line of input contains a single integer P, ($1 \le P \le 10000$), 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 of input. It contains the data set number, K, followed by the order ***N,*** N ($2 <= N <= 10000$), of the *Farey Sum* that is to be computed.

Output

For each data set there is a single line of output. The single output line consists of the data set number, K, followed by a single space followed by the *Farey Sum* as a decimal fraction in lowest terms. If the denominator is **1**, print only the numerator.

Sample Input	Sample Output
4 1 6 2 15 3 57 4 9999	1 35/2 2 215/2 3 2999/2 4 91180457/2