E • Best Rational Approximation

Many microcontrollers have no floating point unit but do have a (reasonably) fast integer divide unit. In these cases it may pay to use rational values to approximate floating point constants. For instance, 

$$\frac{355}{113} = 3.1415929203539823008849557522124$$

is a quite good approximation to 

$$\pi = 3.14159265358979323846$$

A best rational approximation, \(p/q\), to a real number, \(x\), with denominator at most \(M\) is a rational number, \(p/q\) (in lowest terms), with \(q \leq M\) such that, for any integers, \(a\) and \(b\) with \(b \leq M\), and \(a\) and \(b\) relatively prime, \(p/q\) is at least as close to \(x\) as \(a/b\):

$$|x – p/q| \leq |x – a/b|$$

Write a program to compute the best rational approximation to a real number, \(x\), with denominator at most \(M\).

Input

The first line of input contains a single integer \(P\), \((1 \leq P \leq 1000)\), 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 of input. It contains the data set number, \(K\), followed by the maximum denominator value, \(M\) \((15 \leq M \leq 100000)\), followed by a floating-point value, \(x\), \((0 \leq x < 1)\).

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 numerator, \(p\), of the best rational approximation to \(x\), followed by a forward slash (/) followed by the denominator, \(q\), of the best rational approximation to \(x\).