Toward Infinity

Story: Twilight Sparkle was working on some formulas when she came across a strange pattern.

When she added 1/2 + 1/4 + 1/8 + ..., she saw that it kept getting closer and closer to 1.

She was able to figure out that problem and a few more, but there are others that are too difficult. She needs your help.

Problem Statement

Given k and r, integers, find

Sum from n = 1 to infinity of n^k / r^n.

Also you must output the exact value, as a fraction in lowest terms.

Input

You will be given a number T on the first line. The following T lines will be of the form

S k r

where S is a String label with no spaces, and both k and r are as described above.

Output

Your output will contain T lines of the form

S N / D

where S is the label you were given in the input, N is the numerator of the answer, and D is the denominator. D may be 1.

To be more precise, if the fraction is negative, then output the negative sign next to N.

Example

Input:
6
Case1: 0 2
Case2: 0 3
Case3: 0 -3
Label: 2 9
Otherlabel: 12 16
Biggest: 50 -555

Output:
Case1: 1 / 1
Case2: 1 / 2
Case3: -1 / 4
Label: 45 / 256

Otherlabel: 268201436794928 / 320361328125
Biggest: -7154284479923737922305664185068303839967765199078665429384228544635101622455393901

882650681431892067495137019178862799169155069446928707568453465 /

708605590708315484115807367753335917996473252333345569546511090260650714823008759459 3

202747286906837896547848011111318621847552

Note: The output for each case should all be on one line. It is split in the final case here for readability.

Bounds

T <= 10000

0 <= k <= 50

1 < |r| <= 1000

The timelimit per case is ~x5 my Java solution.