

**DWITE Online Computer Programming Contest
February 2005**

Problem 3

Simple Continued Fractions

A simple continued fraction representation of a number x is given by

$$x = a_0 + \frac{1}{a_1 + \frac{1}{a_2 + \frac{1}{a_3 + \frac{1}{a_4 + \dots}}}}$$

where a_0, a_1, a_2, \dots are integers and $a_1, a_2, \dots > 0$.

For example, $19/8$ is converted into its simple continued fraction form as follows:

$$\frac{19}{8} = 2 + \frac{3}{8} = 2 + \frac{1}{8/3} = 2 + \frac{1}{2 + \frac{2}{3}} = 2 + \frac{1}{2 + \frac{1}{3/2}} = 2 + \frac{1}{2 + \frac{1}{1 + \frac{1}{2}}}$$

The sequence 2,2,1,2 is used to represent the simple continued fraction above.

The input file (**DATA31.txt** for the first submission and **DATA32.txt** for the second submission) will contain 5 sets of data. Each set of data contains two lines. The first line contains the numerator and the second line contains the denominator. Both the numerator and the denominator will be positive integers.

The output file (**OUT31.txt** for the first submission and **OUT32.txt** for the second submission) will contain five lines of data. Each line will contain the sequence that represents the continued fraction.

<u>Sample Input (3 sets of data only)</u>	<u>Sample Output</u>
6	0, 1, 3
8	2, 2, 1, 2
19	3, 1, 2
8	
22	
6	