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Continued Fraction

This assignment involves computing continued fractions, and contains three parts.

The general form of a continued fraction is:

A finite continued fraction is an expression of the form

$$a_0 + \cfrac{1}{a_1 + \cfrac{1}{a_2 + \cfrac{1}{\ddots + \cfrac{1}{a_n}}}},$$

where a_0 is an integer, all other a_i are positive integers, and n is a non-negative integer. We can specify a continued fraction by an array of integers containing the values $a_0 \ldots a_n$.

1. Write a function that takes an array of integers as specified above (and ending with a -1) and returns the value of the fraction **as a double**.

2. Write a function that takes an array of integers as specified above (and ending with a -1). Your function will represent the value of the continued fraction as a "regular" fraction, p/q, in **lowest terms**. We are looking for the result of doing the fractional arithmetic and keeping everything in integers as we work our way through. The function returns a **2-element integer array**, v, with v[0]=p and v[1]=q.

3. Write **recursive functions** that, given the above representation of a continued fraction, returns p and q such that p/q represent the value of the continued fraction as a "regular" fraction in **lowest terms**, as in question 2 above.