

A given input file contains the values $x_1, y_1, x_2, y_2, \dots, x_n, y_n$, in that order. Each pair (x_i, y_i) represents a point in the xy -plane. We want to compute the coefficients a and b of the equation

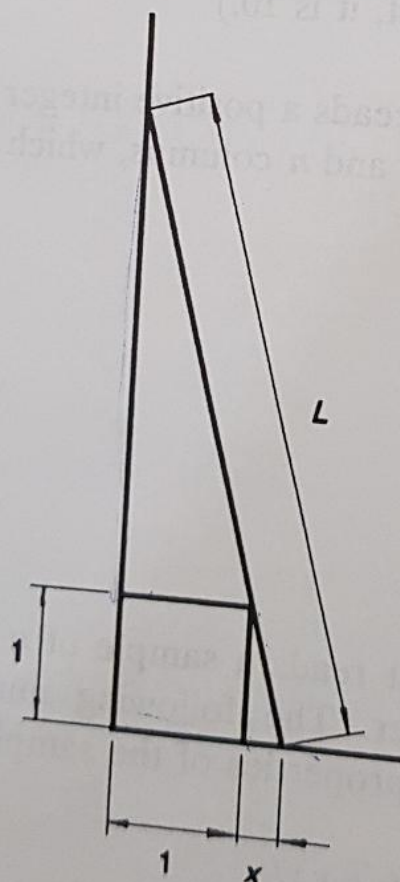
$$y = a + bx$$

which represents a *regression line*, that is, a straight line which fits 'best' through the n given points. Use the *method of least squares* by Gauss, according to which a and b are found as the solution of the following system of linear equations:

$$an + b\sum x_i = \sum y_i$$

$$a\sum x_i + b\sum x_i^2 = \sum x_i y_i$$

A ladder has a given length L . It is placed against a wall, and touches a box, which is a cube with height 1, as shown in Fig. A1. Compute the distance x between the box and the bottom of the ladder.



We can write $8/35 = 1/(4 + 3/8)$. Applying the same process to $3/8$, we obtain $8/35 = 1/\{4 + 1/(2 + 2/3)\}$. We proceed in this way until the final plus sign is followed by the numerator 1. In our example, this is the case after another step, which gives $8/35 = 1/[4 + 1/\{2 + 1/(1 + 1/2)\}]$. We can represent such an expression, called a *continued fraction*, by listing all integers that occur in it except for all numerators 1. In this example we obtain 4, 2, 1, 2. Write a program which reads two positive integers a and b and computes the sequence representing the continued fraction for a/b .