2. [Polynomial division]
Consider polynomials with real valued coefficients. A degree n polynomial is an expression of the form

$$a(x) = a_n x^n + ... + a_1 x^1 + a_0,\ a_n \neq 0$$

Given polynomials $a(x)$ of degree m and $b(x)$ of degree n, where $m \geq n \geq 0$, in the division of $a(x)$ by $b(x)$, the quotient polynomial $q(x)$ and remainder polynomial $r(x)$ are defined by

$$a(x) = b(x) * q(x) + r(x), \text{ where degree}(r) < n$$

You will represent the degree n polynomial a by a doubly linked list of elements (i, a_i), $a_i \neq 0$ ordered on decreasing values of i. In order to approximate real values, implement the polynomial coefficients a_i using C *float*.

a) Write a C function to perform polynomial division.
b) Write C functions to input (output) a polynomial from (to) stdin (stdout) as comma separated pairs of the form (i, a_i), $a_i \neq 0$ ordered on decreasing values of i.
c) Write a C main() which will repeatedly accept (from stdin) 2 polynomials and output the quotient polynomial and remainder polynomial resulting from the division of the first input polynomial by the second input polynomial.