

B. Triangle (16 Mb, 1 sec)

During his summer holidays, hacker Kirill helped his parents in the country. He was to take care of a potato field of triangular shape. One day, when he was picking potato beetles and thinking about the use of geometry, he invented the following problem.

Three points on the plane are defined by their coordinates: $A(X_a; Y_a)$, $B(X_b; Y_b)$ and $C(X_c; Y_c)$. Find point O inside triangle ABC such that the proportion of areas of triangles AOB , BOC and COA would be $P : Q : R$.

Help Kirill and write a program to determine the coordinates of point O .

Limitations

$-10000 \leq X_a, Y_a, X_b, Y_b, X_c, Y_c \leq 10000$

$1 \leq P, Q, R \leq 10000$.

Numbers $X_a, Y_a, X_b, Y_b, X_c, Y_c, P, Q, R$ are integer.

Triangle ABC is nondegenerate.

Input

The first three lines of the input file contain the coordinates of points A, B, C : $X_a, Y_a, X_b, Y_b, X_c, Y_c$.

The fourth line lists numbers P, Q and R .

Output

Write the coordinates of point O with precision 10^{-6} to the output file.

Sample Input	Sample Output
0 0 6 8 6 0 7 8 9	4 3