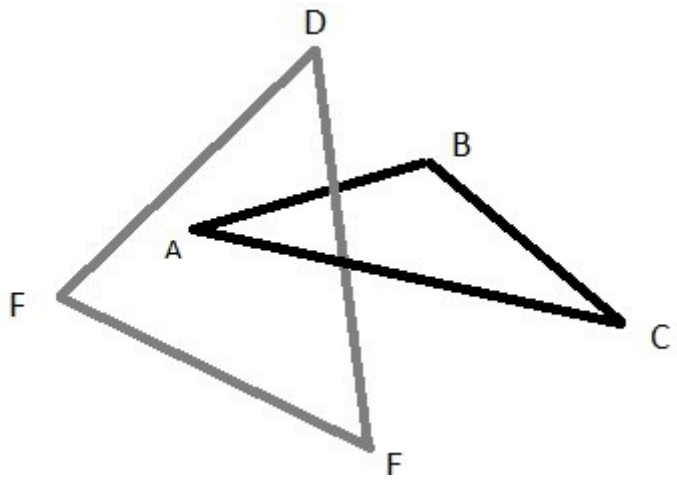
Problem G. Gather Linked Triangles

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	128 megabytes

A triangle $\triangle ABC$ is linked by a triangle $\triangle DEF$ if

- Exactly one edge of $\triangle DEF$ passes through the interior of $\triangle ABC$ (in the plane of $\triangle ABC$)(see figure below) OR
- One vertex of $\triangle DEF$ lies in the interior of $\triangle ABC$ (in the plane of $\triangle ABC$) and the adjacent edges lie on opposite sides of the plane of $\triangle ABC$.



It turns out that $\triangle ABC$ is linked by $\triangle DEF$ if and only if $\triangle DEF$ is linked by $\triangle ABC$. In this case we say that $\triangle ABC$ and $\triangle DEF$ are linked.

A set of points in 3-dimensional space is in general position, if no four points lie in the same plane (which means no three points lie on the same line).

It is known that given any six points in 3-dimensional space in general position, there is at least one way to split the six points into two sets of three so that the triangles determined by the two subsets are linked. Note that if the points are in general position, case 2 above can not occur because it would have four points in the plane of $\triangle ABC$.

Write a program which takes as input six points in 3-dimensions and outputs the number of ways of splitting the points into two sets of three which give linked triangles as well as the points in the subsets.

Input

Input consists of six lines containing three space separated double precision floating point values x, y and z giving the coordinates of a point, for six points in total. $(-10 \leq x, y, z \leq 10)$

Output

The first line of output contains a single decimal integer N, which is the number of linked triangles found.

The first line is followed by N additional lines each containing two space decimal integers, m and n, for which choosing points 1, m and n as one triangle and the remaining points as the other triangle give a linked pair. On each of these lines, $m < n$, and the lines should be in lexicographical order.

That is (now pay attention), if $m1$ $n1$ is above $m2$ $n2$, then either $m1 < m2$ or $(m1 = m2$ and $n1 < n2)$.

Example

standard input	standard output
1 0 0 -1 0 0 0 1 0.2 0 -1 0.2 0.2 0.2 1 0.2 0.2 -1	3 2 3 2 5 3 4