E. A Colourful Prospect

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

Firecrackers scare Nian the monster, but they're wayyyyy too noisy! Maybe fireworks make a nice complement.

Little Tommy is watching a firework show. As circular shapes spread across the sky, a splendid view unfolds on the night of Lunar New Year's eve.

A wonder strikes Tommy. How many regions are formed by the circles on the sky? We consider the sky as a flat plane. A region is a connected part of the plane with positive area, whose bound consists of parts of bounds of the circles and is a curve or several curves without self-intersections, and that does not contain any curve other than its boundaries. Note that exactly one of the regions extends infinitely.

Input

The first line of input contains one integer n ($1 \leq n \leq 3$), denoting the number of circles.

The following n lines each contains three space-separated integers x, y and r ($-10 \leq x, y \leq 10$, $1 \leq r \leq 10$), describing a circle whose center is (x, y) and the radius is r. No two circles have the same x, y and r at the same time.

Output

Print a single integer — the number of regions on the plane.

Examples

input
3 0 0 1 2 0 1 4 0 1
output
4

input
3 0 0 2 3 0 2 6 0 2
output
6

input
3 0 0 2 2 0 2 1 1 2
output
8

Note

For the first example,

For the second example,

For the third example,