Problem Nests

Input file	`stdin`
Output file	`stdout`

In Nowhere land, there are N nests. The nests are represented in the plane either by circles or by rectangles with sides parallel to the coordinate axes. For two nests A and B, we say that A nests in B if every point inside or on the boundary of nest A is also inside or on the boundary of nest B. We call a "nesting chain" a subset of nests $A_1, A_2, A_3, \ldots, A_k$, where A_i is nested in A_{i+1} for every $1 \leq i < k$.

Task

For the given N nests, write a program that finds the maximum cardinality of a nesting chain. The cardinality of a nesting chain is equal to the number of nests that make up the chain.

Input Data

The first line of the standard input contains the natural number N, representing the number of nests. The following N lines describe the N nests as follows: the first number t on each line will be 0 or 1. If t is 0, then the line will contain 4 more natural numbers lx, ly, rx, ry, separated by spaces. The pair (lx, ly) represents the bottom-left corner of the rectangle, and the pair (rx, ry) represents the top-right corner of the rectangle. If t is 1, then the line will contain 3 more natural numbers x, y, r, where (x, y) represents the center of the circle, and r is the radius of the circle.

Output Data

The standard output must contain a single natural number representing the maximum cardinality of a nesting chain.

Restrictions and Clarifications

- Nests can intersect.
- $1 \leq N \leq 2000$.
- $lx \leq rx$.
- $ly \leq ry$.
- Coordinates and radii are natural numbers less than or equal to 30 000.

Examples

Input file	Output file	Explanations
8 0 1 1 5 5 0 6 1 8 2 1 9 9 2 0 3 1 5 3 0 2 2 4 4 1 3 3 1 0 2 2 4 4 0 9 9 11 15	4	Explanation: The nesting chain with the maximum cardinality consists of the nests with indices 6, 5, 7, 1 (assuming 1-based indexing from the input order).