

# Two Circles

Given two circles:  $O1$  with the center  $o1 = (x_1, y_1)$  and a radius  $r_1$  and  $O2$  with the center  $o2 = (x_2, y_2)$  and radius  $r_2$ , please compute if  $O1$  is inside  $O2$  or if  $O2$  is inside  $O1$ .

## Input

First  $t < 1000$ , the number of test cases. In each of the following  $t$  lines, 6 integers:  $x_1 y_1 r_1 x_2 y_2 r_2$ . Where  $0 \leq x_1, y_1, x_2, y_2 \leq 10000$  and  $0 < r_1, r_2 \leq 10000$ .

## Output

For each test case print one character:

- I, if  $O1$  is inside  $O2$  (or if  $O2$  is inside  $O1$ ),
- E, if  $O1$  is internally tangent to  $O2$  (or if  $O2$  is internally tangent to  $O1$ ),
- O, in other cases.

## Example

**Input:**

```
2
103 104 5 100 100 10
103 104 10 100 100 10
```

**Output:**

```
E
O
```