

**2018/2019 SOUTHERN CALIFORNIA REGIONAL
INTERNATIONAL COLLEGIATE PROGRAMMING CONTEST**

**Problem 0
Find Poly**

For the purposes of this problem a geometric figure is a set of line segments connected directly or indirectly at their end points.

A polygon is a figure where all the line segments form just one loop in one direction.

See figure 1 which has 10 figures of which a,b,e,and f are polygons. The dots are the end points of the line segments.

Note that b is self intersecting but that intersection is not at the end points of the intersecting line segments. Similarly c and d as well as e and f intersect but are not connected.

Your task is to count the total number of figures and identify how many are polygons.

The input is a series of lines terminated by end-of-file. Each line will have one or more line segments of the form:

$(x1, y1), (x2, y2);$

where $(x1, y1)$ is one end point and $(x2, y2)$ is the other end point. The separator characters, '(),;' may be preceded and followed by white space. A line will be at most 100 characters long. There will be at most 200 line segments.

A given line segment will only appear once in the input and none will be of length 0. Each x and y will be integers ≥ 0 and ≤ 99 . Line segments are not directed so the order of the end points in the line segment are not significant. The order of the line segments in the input is also not significant.

Print the total number of figures followed by a single space then the number of polygons found. No leading or trailing whitespace is to be printed on an output line and there are to be no signs or leading zeroes in front of an integer.

sample input

```
(84,84), (78,84); (68,60), (64,64); (20,85), (15,88); (0,0), (2,8); (30,60), (30,66);  
(13,40), (18,38); (15,88), (15,95); (18,38), (8,38); (31,7), (25,10); (30,66), (26,70);  
(40,14), (30,19); (5,85), (15,88); (48,20), (56,26); (84,84), (84,82); (66,82), (70,86);  
(15,95), (25,90); (70,86), (66,88); (59,23), (50,27); (15,88), (5,80); (78,84), (74,82);  
(60,80), (66,82); (5,85), (5,80); (25,10), (40,14); (20,85), (25,90); (20,60), (30,66);  
(13,36), (14,30); (30,60), (20,60); (64,64), (60,60); (31,7), (30,19); (15,88), (25,90);  
(68,60), (76,64); (8,38), (13,40); (5,85), (15,95); (0,0), (10,4); (10,30), (14,30);  
(74,82), (70,86); (10,30), (12,43); (6,10), (10,4); (5,80), (20,85); (6,10), (2,8);  
(60,80), (66,88); (84,82), (74,82); (12,43), (13,36);
```

sample output

10 4