### **SIENA COLLEGE**

**29th Annual** High School Programming Contest

##### **April 1, 2016**

###### Problem #7:  Counting Squares

Background Information: Given a collection of line segments on a standard Cartesian coordinate grid, can you determine the number of complete squares with all sides completely marked by portions of line segments?

###### Programming Problem:

Input:  A positive integer N ≤ 100, followed by N lines, each containing two pairs of non-negative integers i and j with both less than or equal to 100 ( 0 ≤ i, j ≤ 1,000,000). Each pair represents an (x, y) coordinate of an endpoint of a line segment. The segments are parallel to either the x axis or the y axis. Note that each end point is in the first quadrant or on at least one of the axes.

Output: The number of squares determined by the line segments.

###### Example 1: Input:  4

0 0 2 0

0 0 0 1

0 1 1 1

1 1 1 0

######  Output:  1

###### Example 2: Input:  7

0 0 1 0

1 0 2 0

2 0 2 2

2 2 0 2

0 2 0 0

0 1 2 1

1 2 1 0

######  Output:  5

###### Example 3: Input:  8

0 0 3 0

0 1 3 1

0 2 3 2

0 3 3 3

0 0 0 3

1 0 1 3

2 0 2 3

3 0 3 3

######  Output:  14