

4107 TUSK

A conservation group found a way to scan the cross-section of elephant tusks like the one shown on the left. The scanned image of a tusk is a collection of bright spots, which can be treated as a set of points on the plane, where no three points form a straight line. The group made a database of many tusks and hope that the database can help in tracking illegal ivory trade.

To facilitate retrieval from the database, it is desirable to have a feature representation that remains unchanged even if a scanned image is translated or rotated. They decided to use the number of k -sets to represent a set of points, which is defined below.

Consider a set P of n points in the plane, where no three points form a straight line. Any line in the plane that does not contain a point in P will split the set into two sets X, Y , where X contains points on one side of the line and Y contains points on the other side. If the number of points in X is k , then we call the collection $\{X, Y\}$ a k -set in P . Note that $\{X, Y\} = \{Y, X\}$, and thus a k -set is also an $(n - k)$ -set. Given a set P and k , your task is to compute the number of different k -sets in P .



Cross-section of an elephant tusk

Input

The input consists of a line containing the number c of datasets, followed by c datasets, followed by a line containing the number '0'.

The first line of each dataset contains two integers, separated by a blank. The first integer gives the number n of points in P , and the second integer gives k , where $(0 < k < n \leq 2000)$. The following n lines of each dataset each contains two non-negative integers, indicating the x and y -coordinates of the corresponding point. The x and y -coordinates range from 0 to 10000.

Output

The output consists of one line for each dataset. The c -th line contains the number of k -sets for dataset c .

Sample Input

```
1
6 2
0 0
4 0
```

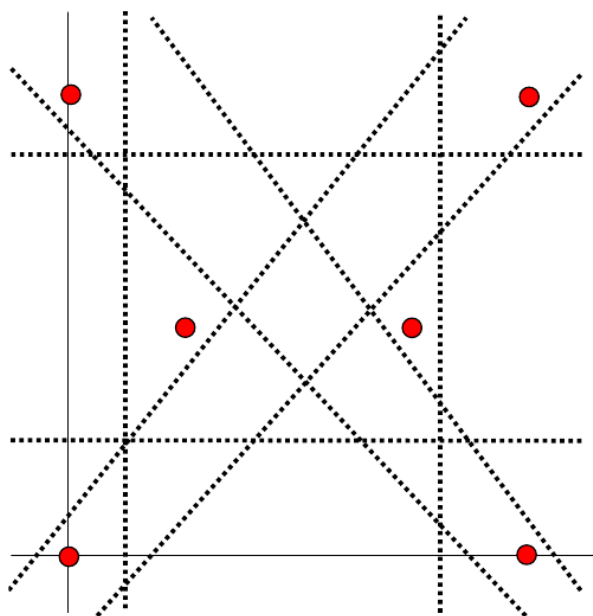


Illustration of dataset and the lines that form its 2-sets for the sample below.

4 4
0 4
1 2
3 2
0

Sample Output

8