Problem L. Regional Champion

Time limit: 2 seconds
Memory limit: 1024 megabytes

Arona wants to win the regional championship. So Plana generates the following problem for Arona based on the keyword "region".

Given three integers n, m, and k, you need to draw n circles, m triangles, and k lines on a plane to divide it into as many regions as possible.

Of course, Arona's drawing skills and mathematical abilities are very poor. So she comes to you for help.

Input

There are multiple test cases. The first line of the input contains an T ($1 \le T \le 5 \times 10^3$) indicating the number of test cases. For each test case:

The first and only line contains three integers n, m, and k ($0 \le n, m, k \le 100$, $n + m + k > 0$) indicating the number of circles, triangles, and lines.

It is guaranteed that the sum of $(\max(n, m, k))^3$ of all test cases does not exceed 10^7.

Output

For each test case:

First, output one line containing one integer, indicating the maximum number of regions that can be divided into.

Then output n lines. Each of these lines contains three integers x, y, and R ($-10^3 \le x, y \le 10^3$, $1 \le R \le 10^3$) separated by a space, representing the coordinates of the center of the circle, as well as the radius of the circle.

Next, output m lines. Each of these lines contains six integers x_1, y_1, x_2, y_2, x_3, and y_3 ($-10^3 \le x_1, y_1, x_2, y_2, x_3, y_3 \le 10^3$, $(x_1, y_1) \ne (x_2, y_2)$, $(x_1, y_1) \ne (x_3, y_3)$, $(x_2, y_2) \ne (x_3, y_3)$) separated by a space, representing the coordinates of the three vertices in the triangle.

At last, output k lines. Each of these lines contains four integers x_1, y_1, x_2, and y_2 ($-10^3 \le x_1, y_1, x_2, y_2 \le 10^3$, $(x_1, y_1) \ne (x_2, y_2)$) separated by a space, representing the coordinates of two points on the line.

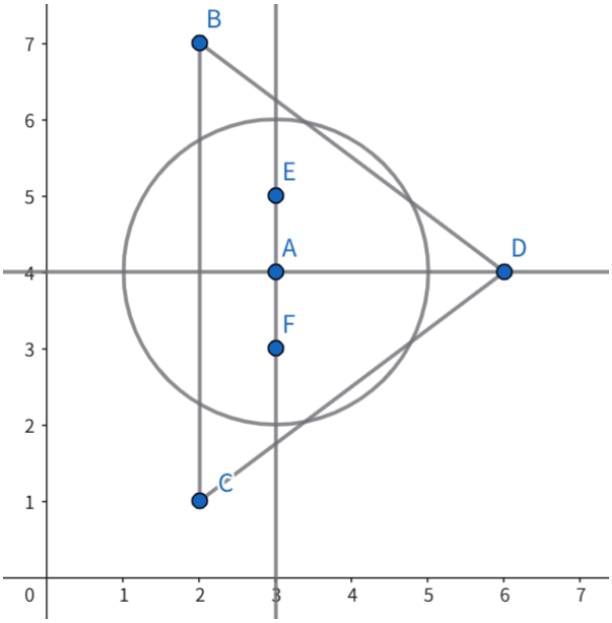
It can be proven that, even with the limits specified above, we can always reach the optimal answer.

Example

standard input	standard output
3 1 0 1 0 1 1 1 1 2	4 0 0 1 -2 0 2 0 4 0 0 0 2 2 0 0 1 1 0 18 3 4 2 2 7 2 1 6 4 3 4 6 4 3 3 3 5

Note

The third sample test case is shown below.


B
E
A
D
F
C
0
1
2
3
4
5
6
7

