# Regional Champion

| | |
|---|---|
| Input file: | `standard input` |
| Output file: | `standard output` |
| 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<br>1 0 1<br>0 1 1<br>1 1 2 | 4<br>0 0 1<br>-2 0 2 0<br>4<br>0 0 0 2 2 0<br>0 1 1 0<br>18<br>3 4 2<br>2 7 2 1 6 4<br>3 4 6 4<br>3 3 3 5 |

## Note

The third sample test case is shown below.