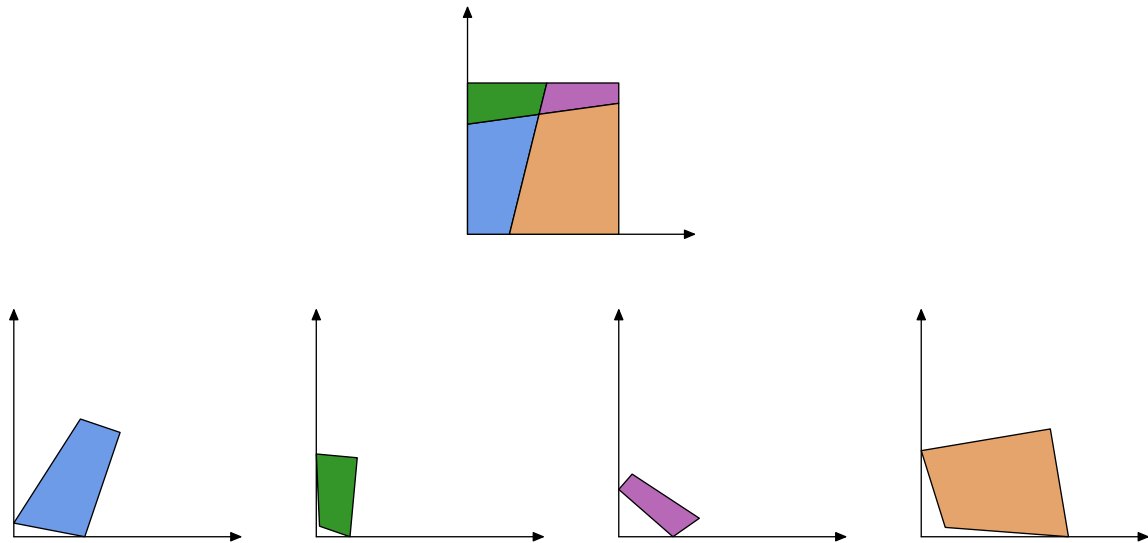


Jigsaw Puzzle

Input file: **standard input**
Output file: **standard output**
Time limit: **3 seconds**
Memory limit: **512 megabytes**

The following operation is performed at most 20 times with a square piece of paper of the size 1×1 . Two points inside the square are picked **uniformly at random**, and a line is drawn through them.

Later, the paper is cut along all of the lines into n pieces. Then, pieces are randomly rotated (but not flipped), shifted, and given to you. You need to figure out the initial position of each piece.



Input

The first line contains one integer n ($2 \leq n$) — the number of pieces. The descriptions of the pieces follow. Each description starts with an integer m ($3 \leq m$) — the number of vertices. Each of the following m lines contains two real numbers x_i and y_i ($0.0 \leq x_i, y_i \leq 2.0$) given with 12 digits after the decimal point. The vertices are given in a counter-clockwise order.

Output

You need to print pieces in the order given in the input.

For each piece, print the coordinates of the vertices in the order given in the input. Each coordinate must fulfill the condition $0.0 \leq x_i, y_i \leq 1.0$.

If there are several possible ways to put pieces inside a 1×1 square such that they do not intersect, you can print any of them.

The answer will be considered incorrect if the intersection area of any two polygons is bigger than 10^{-6} .

Example

standard input	standard output
4	0.277161636 -0.000000000
4	0.473262431 0.793116645
0.440405375916 0.778474079786	0.000000000 0.728029248
0.000000000000 0.090337001520	0.000000000 0.000000000
0.469097990019 0.000000000000	
0.702887505082 0.689470121906	0.524415047 1.000000000
4	0.000000000 1.000000000
0.222810526978 0.000000000000	0.000000000 0.728029248
0.270828246634 0.522212063829	0.473262431 0.793116645
0.000000000000 0.547114887265	
0.021480010612 0.069880870008	1.000000000 1.000000000
4	0.524415047 1.000000000
0.000000000000 0.312825941471	0.473262431 0.793116645
0.358219176380 0.000000000000	1.000000000 0.865558433
0.532830100286 0.122181578260	
0.088431750275 0.414089758021	0.473262431 0.793116645
4	0.277161636 -0.000000000
0.158867722074 0.061734605990	1.000000000 -0.000000000
0.973532298476 0.000000000000	1.000000000 0.865558433
0.853551564066 0.712811281737	
0.000000000000 0.569141075980	