

제 10 회 대학생 프로그래밍 경시대회



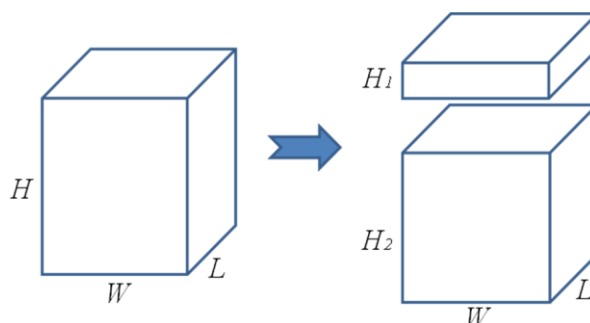
Problem D Cube

WoodArt® is famous company for manufacturing a wood carving. A cosmopolitan carver Mr. Kube, who works in this company, recently spends much time to make a wonderful sculpture using only wooden cubes of various sizes.

Woods supplied to WoodArt® are parallelepipeds with a width W , a length L and height H . Mr. Kube makes it several cubes by cutting. For an elaborate cut, he cut a parallelepiped into two pieces a time. Repeating cuts, he makes every piece a cube. For efficiency, he want to minimize the number of cuts to make every piece a cube.

W, L, H are integers between 1 and 200(including), and every cube should have sides of longer than 1.

Assume that there is no loss in cutting woods. Seeing the following figure, the original wood with W, L and H is cut into one W, L and H_1 and the other W, L and H_2 , assume that $H_1 + H_2 = H$. This also holds for W and L .



Input

Your program is to read from standard input. The input consists of T test cases ($0 < T < 21$) and each test case consists of one line. T is given in the first line. Each test case contains an integer W, L, H ($1 \leq W, L, H \leq 200$).

Output

Your program is to write to standard output. Print exactly on line for each test case. The line should contain an integer indicating the cubes which produced using the minimum number of cuts.

The following shows sample input and output for three test cases.

Sample Input	Output for the Sample Input
3	3
15 5 5	10
2 4 3	13
5 6 6	