

Oblique Cuboid

Computer Science Society
Programming Contest
Winter 2008

In this problem, we will produce oblique projections of cuboids. A cuboid (also known as a rectangular prism) is a solid figure bounded by six rectangular faces, and an oblique projection is a method for producing (crude) two-dimensional drawings of three-dimensional figures. Mathematically, a coordinate (x, y, z) in three-dimensional space appears at coordinate $(x + az, y + bz)$ in the two-dimensional drawing. If $a = b = 1$, the oblique projection is known as a 45° oblique projection.

Input Format

Each line of input contains three positive numbers $h > 0$, $w > 0$, $d > 0$ representing the height, width and depth of a cuboid in units. The front lower left corner of the cuboid is assumed to be at coordinate $(0, 0, 0)$ in three-dimensional space.

Output Format

For each line of input, output a 45° oblique projection of the cuboid, showing as asterisks the points on its edges whose x -, y - and z -coordinates are whole numbers. In the output, two points separated by one unit of height appear one line apart and two points separated by one unit of width appear one column apart, as shown in the output samples.

Input and Output Sample

see reverse side of this page

Input Sample

5 7 3
4 12 5
1 1 1
3 3 3

Output Sample

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