Problem HIDEUFOS: Hide UFOs

The AFRNBNHDC (association for research of native but not hopelessly dumb civilizations) noticed the earth for the first time when they saw the rising of the Egyptian civilization. They decided to send a group of scientists to observe the humans. However, the aliens stayed hidden because they wanted to keep the evolution under surveillance without any interference.

Soon, the scientists realized that humans are very aggressive and so they decided to prepare for a fast escape. But hiding UFOs in an always *ready to start* position is not that easy. Therefore, the AFRNBNHDC let a few humans into the secret of their existence who could act more freely on earth. These humans founded a secret sect under the leadership of pharaoh Djozer. Since the aliens were in need of really big buildings, the humans began to construct the first pyramids.

Egyptian pyramids consist of three parts: The bottom part is a solid block with small channels for the exhaust gases of the UFOs. The middle part is the UFO itself covered by thin stone plates on the sides to hide it. The top part exists to better fit into the mythological explanation of the pyramids. It is just a small, hollow pyramid that is made up of four thin plates – plates as they were used in the middle part.

Unfortunately, the human race proved in the following years that they were not worth the effort and the AFRNBNHDC consequently left the planet. However, the sect was instructed to stay and wait for the return in case of any unexpected evolutionary improvements.

Recently, scientists at CERN tried to produce a black hole in the laboratory. The sect immediately reported this major evolutionary step to the aliens. In response to the report, the AFRNBNHDC promptly alarmed the AANCWRDI (association against native civilizations with really dumb ideas) who immediately sent off their UFOs. However, these UFOs have different shapes and the ancient pyramids cannot be used anymore. The AANCWRDI asked the sect to construct new buildings. Unfortunately, the knowledge of how to build pyramids is a bit rusty and that's why the sect needs *your* help. They ask you to write a program that calculates how many solid blocks and how many thin plates they need to hide a specific UFO. The old UFOs were pyramidal frusta with a quadratic bottom side and a centered peak. The new ones are still guaranteed to be pyramidal frusta, but have rectangular bottom and top sides and an off-center peak.
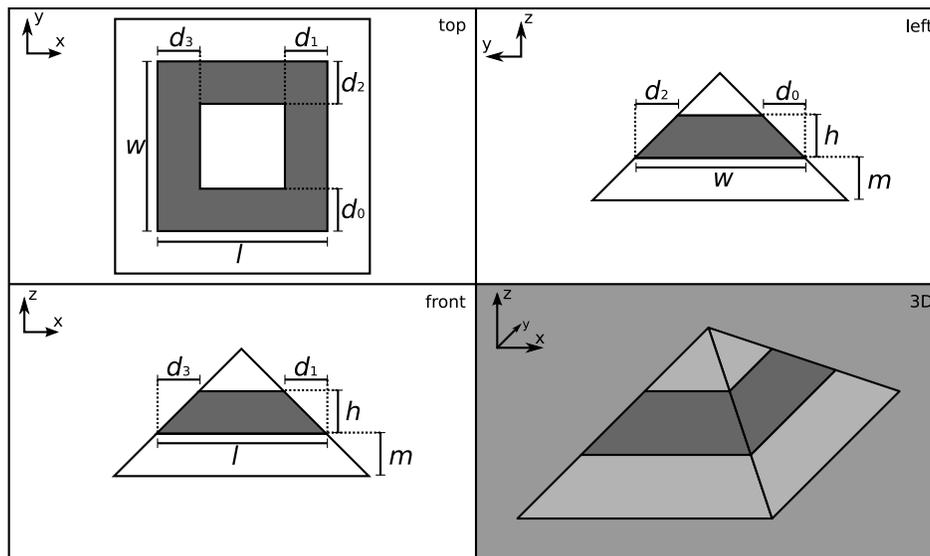

Figure 1: Drawings of the pyramid, and the enclosed dark gray UFO = pyramidal frustum

Input

The first line gives the number of test cases n (at most $1,000$). Each test case consists of three lines. The first line of each test case holds both the height h of the UFO and the height m of the bottom part of the pyramid. The second line consists of the length l and the width w of the bottom of the UFO ($0 < h, m, l, w < 1,000$). The third line contains the four displacements of the upper sides of the UFO (d_0 front, d_1 right, d_2 back, d_3 left). You can assume that $d_0 + d_2 < w$, $d_1 + d_3 < l$ and $0 \le d_0, d_1, d_2, d_3 < 1,000$. All measurements are potentially floating point numbers.

Output

For each test case, print a line with two values that are separated by a single space. The first value must be the total surface of the thin plates that is needed to cover the UFO on the four outer sides and to build the upper part of the pyramid. The second value is the volume of the massive stone that is needed to build the lower part of the pyramid. Print both values rounded to two digits after the decimal point. The values should be accurate up to 10^{-2} absolute precision.

Sample Input 1

```
2
1 1
4 4
1 1 1 1
1 2
4 8
2 1 2 1
```

Sample Output 1

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22.63 25.33
40.52 149.33
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