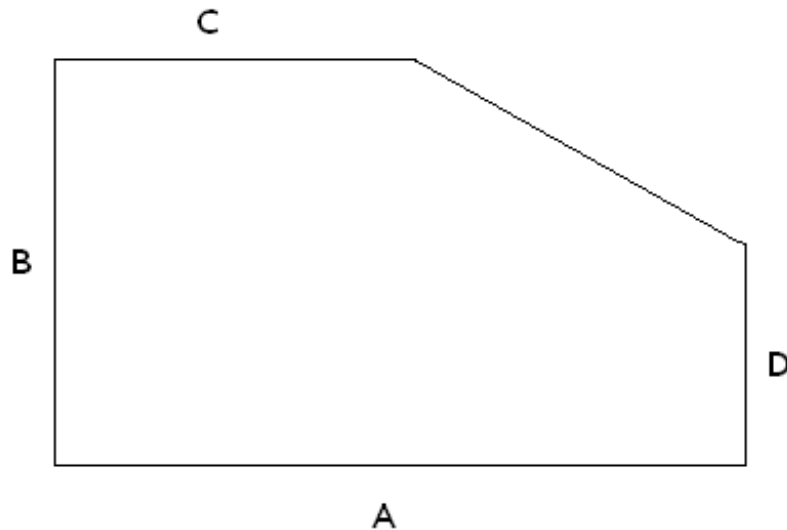


Cutting out rectangles

We are given some scrap gold pieces shaped as in Picture 1. Dimensions A,B,C,D are given in millimeters. A rectangle, having the largest possible area, is now cut out from this piece. Calculate the area which is left after cutting out such a rectangle.



Input

Standard input contains N ($2 \leq N \leq 20\,000$) lines, each containing four values A, B, C, D ($0 \leq C \leq A \leq 100\,000\,000$, $0 \leq D \leq B \leq 100\,000\,000$) separated by spaces. In line $N+1$ there are four zeros separated by spaces. Do not process this test case.

Output

Write N lines to standard output. Each should contain a single number, equal to the area in square millimeters which is left after cutting out the largest rectangle possible. The relative error of your result should not exceed 0.000001 .

Example

Input:

```
11 10 3 6
12 10 2 4
0 0 0 0
```

Output:

```
28.00
37.733333
```

Scoring

For solving this problem you will score 10 points.