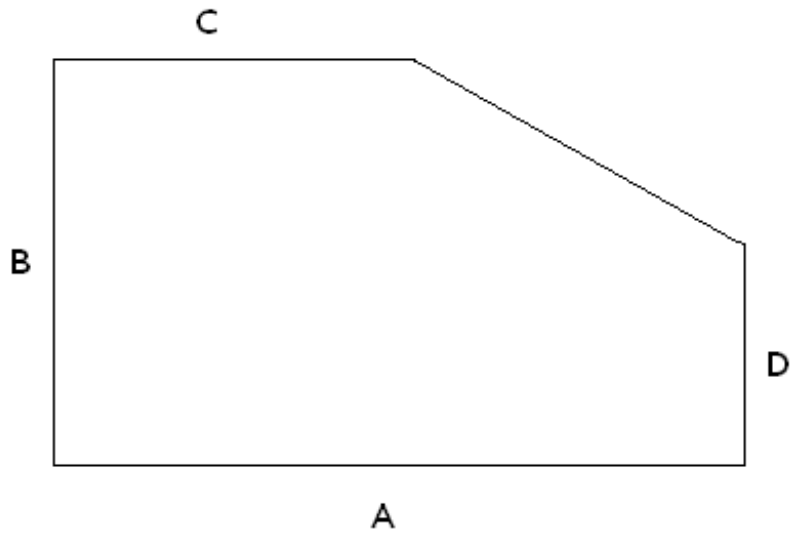
Cutting out rectangles

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 ≤ N ≤ 20 000) lines, each containing four values A,B,C,D (0 ≤ C ≤ A ≤ 100 000 000, 0 ≤ D ≤ B ≤ 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.