

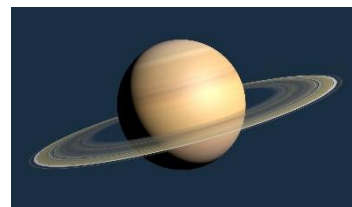
## Problem N

### From Mars to Saturn

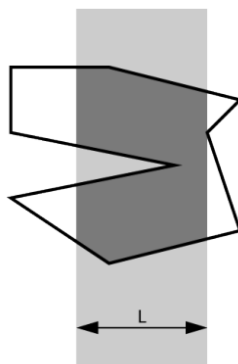
Time Limit: **2 seconds**

Mem limit: **512 Megabytes**

After reading the research paper about work and sleep, the insane Martian programmer Mr. Phidang wants to explore and looking for life on the new planet, which is the Saturn. Thus, he is going to send a spacecraft from Mars to Saturn. His spacecraft contains a huge scanner in order to scan the Saturn's surface.



Assuming that the Saturn's surface is a 2D polygon, and the spacecraft flies over it. The scanner on the spacecraft projects a laser on the surface. In particular, the spacecraft flies by a straight line parallel to the  $y$ -axis and the scanner width is  $L$ .



Mr. Phidang wants to maximize the explored area. Please help him to find the maximum area.

### Input

The first line contains two integers  $n$  and  $L$  ( $1 \leq n, L \leq 20,000$ ) – the number of vertices of the polygon, describing the Saturn's surface, and the width of the scanner.

Each of the next  $n$  lines contains two integers  $x_i$  and  $y_i$  – coordinates of the polygon vertices. Vertices are given in counterclockwise direction. Polygon has no self-intersections and self-touches.

All coordinates are integers, not exceeding  $10^4$  by their absolute value.

### Output

Output the maximum area that can be scanned by the scanner.

The absolute or relative error should not exceed  $10^{-4}$ .



### Sample Input

### Sample output

3 3 0 0 5 1 1 7	14.28
3 40 60 10 50 50 0 0	1111.1111111111113



The 2021 ICPC Vietnam  
Southern Provincial Programming Contest  
University of Science, VNU-HCM  
December 05<sup>th</sup>, 2021

---

