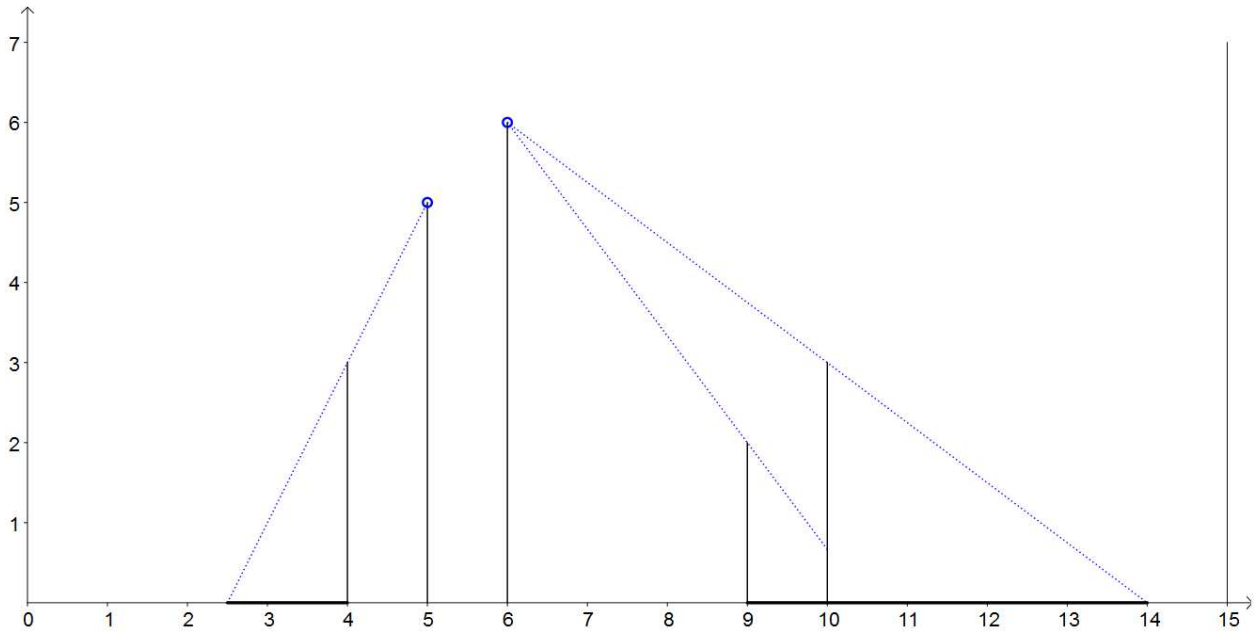
The mayor has decided that it is high time to implement a new system of television transmitters. The city can be represented as **a segment of the length D** on which there are **buildings** of different heights. The width of a building is negligible. On top of some buildings, **television transmitters** are set, their dimensions are also negligible.

Television transmitters emit a television signal in all directions around them. The signal is spread through space **in straight lines** and **cannot pass through buildings**. A certain point in the city is considered **covered** if it is reached by a signal from an existing transmitter.



Find the segment of the city covered by television signal and output its length.

INPUT

The first line of input contains the integer **N** ($1 \leq \mathbf{N} \leq 3 \cdot 10^5$), the number of buildings, and the integer **D** ($1 \leq \mathbf{D} \leq 10^9$), the city length.

Each of the following **N** lines contains three numbers which describe the **i**th building:

1. a number which determines whether there is a transmitter on top of the building: 0 (no) or 1 (yes)
2. an integer $\mathbf{X_i}$ ($0 \leq \mathbf{X_i} \leq \mathbf{D}$), the distance between the building and the left end of the city
3. an integer $\mathbf{H_i}$ ($1 \leq \mathbf{H_i} \leq 10^9$), the building height

The buildings are sorted in ascending order by the distance from the left end of the city. No two buildings will be located on the same distance from the left end of the city.

OUTPUT

The first and only line of output must contain the required length from the text.

Note: the maximum permissible deviation from the official solution is 10^{-3}.

SCORING

In test cases worth 30% of total points, **N** will be less or equal to 1000.

SAMPLE TESTS

input	input
3 10 1 2 6 0 4 3 0 8 2	5 15 0 4 3 1 5 5 1 6 6 0 9 2 0 10 3
output	output
6.000000	8.500000

Clarification of the second example: This example corresponds to the image from the text. The image depicts the city. The buildings are marked with vertical lines, and the transmitters with circles on the tops of the buildings. The bold lines on the x-axis represent the segment of the city not covered by television signal.