Problem 3 – Largest 3 Rectangles

We are given a sequence of rectangles in the following format:

$[a_1 \text{ x } b_1]\ [a_2 \text{ x } b_2]\ \ldots\ [a_n \text{ x } b_n]$

where $a_1 \ldots a_n$ and $b_1 \ldots b_n$ are the sides of the rectangles (positive integers). Our goal is to find **three consecutive rectangles** with **largest total area**. For example, in the following sequence of **6 rectangles** we have marked as bold the largest 3 rectangles, that have total area **31** (4*3 + 1*4 + 5*3 = 31):

[3 x 3] [3 x 2] **[4 x 3] [1 x 4] [5 x 3]** [3 x 1]

Write a program that reads a sequence of rectangles (at least 3) in the specified above format and calculates and prints **the total area of the largest 3 rectangles**.

Input

The input data should be read from the console. At the first line, we have the **input sequence of rectangles** in the specified format. Each rectangle is surrounded in square brackets **[ ]**. The sides of each rectangle are given as two numbers with the '**x**' sign between them. Anywhere around the numbers and around the other characters we could have **spaces** (one or more space).

The input data will always be valid and in the format described. There is no need to check it explicitly.

Output

At the only output line print the **total area** of the largest sequence of 3 rectangles.

Constraints

- The sides of the rectangles will be integers in the range [1…999].
- The **count** of the rectangles will be in the range [3..100].
- The input line will consist of the following characters: '**[**', '**]**', '**0**', '**1**', '**2**', '**3**', '**4**', '**5**', '**6**', '**7**', '**8**', '**9**', '**x**' and ' '.
- Time limit: 0.3 sec. Memory limit: 16 MB.

Examples

Input	Output	Comments
`[3 x 3] [3 x 2] [4 x 3] [1 x 4] [5 x 3] [3 x 1]`	31	`4*3 + 1*4 + 5*3 = 31`
`[12x7][3x5][10x12] [4x3][1x8]`	219	`12*7 + 3*5 + 10*12 = 219`
`[2x2][3x3][4x4][5x5][6x6][7x7][8x8][9x9][10x10]`	245	`8*8 + 9*9 + 10*10 = 245`
`[ 300 x 200 ] [50x 50][ 30 x 20 ]`	63100	`300*200 + 50*50 + 30*20 = 63100`