

Problem G. Count Triangles

Time limit 1000 ms

Mem limit 262144 kB

Like any unknown mathematician, Yuri has favourite numbers: A , B , C , and D , where $A \leq B \leq C \leq D$. Yuri also likes triangles and once he thought: how many non-degenerate triangles with integer sides x , y , and z exist, such that $A \leq x \leq B \leq y \leq C \leq z \leq D$ holds?

Yuri is preparing problems for a new contest now, so he is very busy. That's why he asked you to calculate the number of triangles with described property.

The triangle is called non-degenerate if and only if its vertices are not collinear.

Input

The first line contains four integers: A , B , C and D ($1 \leq A \leq B \leq C \leq D \leq 5 \cdot 10^5$) — Yuri's favourite numbers.

Output

Print the number of non-degenerate triangles with integer sides x , y , and z such that the inequality $A \leq x \leq B \leq y \leq C \leq z \leq D$ holds.

Sample 1

Input	Output
1 2 3 4	4

Sample 2

Input	Output
1 2 2 5	3

Sample 3

Input	Output
500000 500000 500000 500000	1

Note

In the first example Yuri can make up triangles with sides $(1, 3, 3)$, $(2, 2, 3)$, $(2, 3, 3)$ and $(2, 3, 4)$.

In the second example Yuri can make up triangles with sides $(1, 2, 2)$, $(2, 2, 2)$ and $(2, 2, 3)$.

In the third example Yuri can make up only one equilateral triangle with sides equal to $5 \cdot 10^5$.