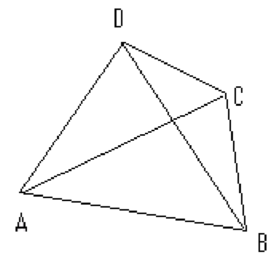
Project Euler #177: Integer angled Quadrilaterals.

This problem is a programming version of Problem 177 from projecteuler.net

Let $ABCD$ be a convex quadrilateral, with diagonals AC and BD. At each vertex the diagonal makes an angle with each of the two sides, creating eight corner angles.



For example, at vertex A, the two angles are CAD, CAB.

We call such a quadrilateral for which all eight corner angles have integer values when measured in degrees an *integer angled quadrilateral*. An example of an integer angled quadrilateral is a square, where all eight corner angles are 45°. Another example is given by $DAC = 20^\circ$, $BAC = 60^\circ$, $ABD = 50^\circ$, $CBD = 30^\circ$, $BCA = 40^\circ$, $DCA = 30^\circ$, $CDB = 80^\circ$, $ADB = 50^\circ$.

Consider $\{a_i\}$ to be sorted sequence of quadrilateral angles. What is the number of non-similar integer angled quadrilaterals such that $a_i \le b_i$?

Note: In your calculations you may assume that a calculated angle is integral if it is within a tolerance of 10^{-9} of an integer value.

Input Format

The input contains eight numbers b_i.

Constraints

- $1 \le b_i \le 180$
- $b_i \le b_{i+1}$

Output Format

Print the only integer which is the answer to the problem.

Sample Input 0

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1 1 1 1 1 1 177 177
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Sample Output 0

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1
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Explanation 0

There is exactly one such quadrilateral.