問題 5 – 正方形 (Squares)

(15 分)

問題敍述

在直角座標系中，所有滿足 $1 \leq x \leq n$ 和 $1 \leq y \leq m$ 的格點 (x, y) 會形成一個 $n \times m$ 的格點。我們可以從這 $n \times m$ 個點中挑出四個相異的點形成一個正方形，請求出所有可能的正方形的面積總和。

輸入格式

輸入只有一行，包含兩個正整數 n, m ，以空白間隔，代表格點的長寬。

輸出格式

輸出一個非負整數，代表所有正方形的面積總和。

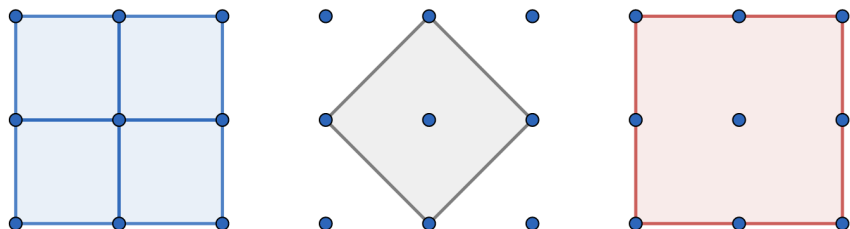## 資料範圍

$1 \leq n, m \leq 1000$

輸入範例 1

3 3

輸出範例 1

10

輸入範例 2

1000 1000

輸出範例 2

1111113888850000

範例說明

如上圖，3×3 的格點可以形成 4 個 1×1 的正方形、一個 2×2 的正方形，和一個傾斜 45 度的 $\sqrt{2} \times \sqrt{2}$ 正方形，面積總和為 $4 \times 1 + 1 \times 4 + 1 \times 2 = 10$。

Q5: Squares

(15 points)

Description

In a Cartesian coordinate system, there are nm lattice points (x, y) (points such that both coordinates are integers) satisfy $1 \leq x \leq n$ and $1 \leq y \leq m$. Consider squares that have their four corners on these $n \times m$ points. What is the sum of the areas of these squares?

Input Format

The input consists of one line, containing 2 integers n and m.

Output Format

Output a single non-negative integer on a single line, which is the area sum of the squares.

Data Range

$$1 \leq n, m \leq 1000$$

Input Example 1
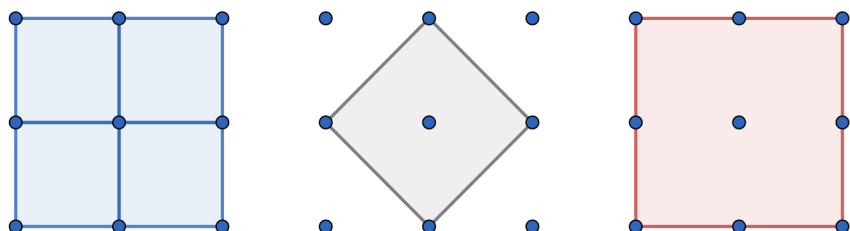
3 3

Output Example 1

10

Input Example 2

1000 1000

Output Example 2

1111113888850000

Example Explanation:

For example 1, as the above figure shows, these 9 points can form four 1×1 squares, a 2×2 square, and a $\sqrt{2} \times \sqrt{2}$ square which is tilted 45 degrees. The sum of areas is $4 \times 1 + 1 \times 4 + 1 \times 2 = 10$.