

Problem I. Integers On Edges

Input file: *standard input*
Output file: *standard output*
Time limit: 1 second
Memory limit: 1024 mebibytes

You are given an integer $n \geq 2$. Construct the set of points (i, j) on a 2D plane such that $1 \leq i \leq n$ and $1 \leq j \leq i$. Consider the undirected weighted graph with these points as vertices and the following edges:

- There is an edge with weight $a_{i,j}$ between (i, j) and $(i + 1, j)$ (for $1 \leq i \leq n - 1$ and $1 \leq j \leq i$).
- There is an edge with weight $b_{i,j}$ between (i, j) and $(i + 1, j + 1)$ (for $1 \leq i \leq n - 1$ and $1 \leq j \leq i$).
- There is an edge with weight $c_{i+1,j}$ between (i, j) and $(i, j + 1)$ (for $1 \leq i \leq n - 1$ and $1 \leq j \leq i - 1$).

For reference, the graph has $n(n + 1)/2$ vertices and $3n(n - 1)/2$ edges.

For a vertex simple path in this graph, the weight of the path is defined as the **product** of the weights of the edges that the path traverses.

Determine the number of unordered pairs of distinct vertices $\{s, t\}$ such that every simple path between s and t has a weight that is a perfect square number.

Input

The first line of the input contains a single integer n ($2 \leq n \leq 1000$).

Then $n - 1$ lines follow. The i -th of those lines contains weights $a_{i,j}$ for $1 \leq j \leq i$ ($1 \leq a_{i,j} \leq 10^6$).

Then another $n - 1$ lines follow. The i -th of those lines contains weights $b_{i,j}$ for $1 \leq j \leq i$ ($1 \leq b_{i,j} \leq 10^6$).

Then yet another $n - 1$ lines follow. The i -th of them contains weights $c_{i+1,j}$ for $1 \leq j \leq i$ ($1 \leq c_{i+1,j} \leq 10^6$).

Output

Print a single integer: the answer to the problem.

Examples

<i>standard input</i>	<i>standard output</i>
2 1 2 2	1
3 1 2 3 4 5 6 7 8 9	0