2x2 Subgrid Sum Problem (medium)
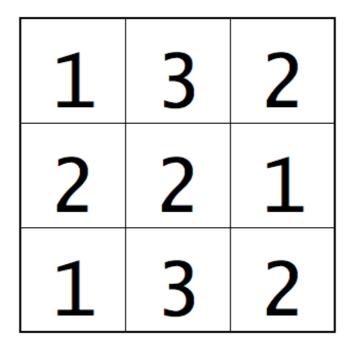
This problem is a higher constraints version of KWACIK (Polish).

You are given a 3x3 grid. You can place an integer m ($a \le m \le b$) in each cell.

How many ways are there to place integers in the cells such that the sum of each 2x2 subgrid is n?

Input

The first line contains an integer T ($1 \le T \le 100$), the number of test cases.

On each of the next T lines, you are given three integers a, b and n. ($0 \le a \le b \le 500, 0 \le n \le 2000$)

Output

For each test case, output a single line containing the number of ways to place integers.

Example

Input:

```
1
1 2 5
```

Output:

```
8
```

Explanation

There are 8 ways to place integers for *a*=1, *b*=2 and *n*=5.

```
2 1 2 : 2 1 2 : 2 1 1 : 1 2 1 : 1 2 1 : 1 1 2 : 1 1 1 : 1 1 1
1 1 1 : 1 1 1 : 1 1 2 : 1 1 1 : 1 1 1 : 2 1 1 : 2 1 2 : 1 2 1
2 1 2 : 1 2 1 : 2 1 1 : 2 1 2 : 1 2 1 : 1 1 2 : 1 1 1 : 1 1 1
```

Information

- There are 7 input files.

- Changed the time limit of the input file #7 to 20 seconds and rejudged all submissions. (2014-10-17)

Credit & Special thanks

- Bartek - the original problem author
- Mitch Schwartz