Problem A: Almost Magic Square

Filename: *group*

Time limit: *8 seconds*

A Magic Square is a square where each cell is filled with numbers and the sum of the numbers in each row, column and diagonal are the same. Here is an example of a 3 by 3 Magic Square:

8	1	6
3	5	7
4	9	2

In this square, all three rows, all three columns and both diagonals add to 15.

As you might imagine, it's quite hard to create one of these squares. In fact, it might be the case that with some sets of numbers, it would be impossible to create a Magic Square.

So, for this problem, we'll try to do something a bit easier: create an "almost magic square."

For a positive integer, ***d***, we'll call a Magic Square a d-Almost Magic Square if the maximum row, column or diagonal sum minus the minimum row, column or diagonal sum is *less than or equal* to ***d***. For example, the 3 x 3 square below,

5	12	3
6	7	13
14	1	8

is a 6-Almost Magic Square because the maximum row, column or diagonal sum is 26 (second row is 6 + 7 + 13 = 26), while minimum row, column of diagonal sum is 20 (first row is 5+12+3 = 20, second column is 12 + 7 + 1 = 20 and forward diagonal is 5 + 7 + 8 = 20).

Given 9 distinct positive integers, we can fill a 3 x 3 square in 9! = 362880 ways.

Of those 362,880 ways, how many of them create ***d***-Almost Magic Squares, for a given value of ***d***?

The Problem

Given nine distinct positive integers to fill a 3 x 3 square, as well as a positive integer, ***d***, determine the number of different arrangements of those nine integers that generate a ***d***-Almost Magic Square.

The Input

The first line of input will contain a single positive integer, $\boldsymbol{c}$ ($1 \leq \boldsymbol{c} \leq 15$), representing the number of input cases to process. Each of the input cases follow. The first line of each input case contains a single positive integer, $\boldsymbol{d}$ ($1 \leq \boldsymbol{d} \leq 10^9$), representing the value of $\boldsymbol{d}$, as described above, for the case. The second line of input for each case will contain 9 distinct space separated positive integers, each in between 1 and 10^8, inclusive.

The Output

For each case, on a line by itself, output the number of arrangements of the given numbers that produce $\boldsymbol{d}$ Almost Magic Squares.

Sample Input	**Sample Output**
2 8 5 12 3 6 7 13 14 1 8 5 1 2 3 4 5 6 7 8 9	2800 3296