Problem J. Skills

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	512 megabytes

Prof. Pang has 3 different skills to practice, including soda drinking, fox hunting, and stock investing. We call them Skill 1, Skill 2, and Skill 3. In each of the following n days, Prof. Pang can choose one of the three skills to practice. In the i-th day ($1 \le i \le n$), if Prof. Pang chooses Skill j ($1 \le j \le 3$) to practice, his level of Skill j will increase by $a_{i,j}$. Initially, Prof. Pang's levels of all skills are 0.

Prof. Pang forgets skills if he does not practice. At the end of each day, if he has not practiced Skill j for k days, his level of Skill j will decrease by k. For example, if he practices Skill 1 on day 1 and Skill 2 on day 2, at the end of day 2, he has not practiced Skill 1 for 1 day and has not practiced Skill 3 for 2 days. Then his levels of Skill 1 and Skill 3 will decrease by 1 and 2, respectively. His level of Skill 2 does not decrease at the end of day 2 because he practices Skill 2 on that day. In this example, we also know that his levels of Skill 2 and Skill 3 both decrease by 1 at the end of day 1.

Prof. Pang's level of any skill will not decrease below 0. For example, if his level of some skill is 3 and at the end of some day, this level is decreased by 4, it will become 0 instead of -1.

Prof. Pang values all skills equally. Thus, he wants to maximize the sum of his three skill levels after the end of day n.

Given $a_{i,j}$ ($1 \le i \le n, 1 \le j \le 3$), find the maximum sum.

Input

The first line contains a single integer T ($1 \le T \le 1000$) denoting the number of test cases.

For each test case, the first line contains an integer n ($1 \le n \le 1000$). The $(i+1)$-th line contains three integers $a_{i,1}, a_{i,2}, a_{i,3}$ ($0 \le a_{i,j} \le 10000$ for any $1 \le i \le n, 1 \le j \le 3$).

It is guaranteed that the sum of n over all test cases is no more than 1000.

Output

For each test case, output the maximum possible sum of skill levels in one line.

Example

standard input	standard output
2 3 1 1 10 1 10 1 10 1 1 5 1 2 3 6 5 4 7 8 9 12 11 10 13 14 15	26 41