

Problem B. Might and Magic

Input file: *standard input*
Output file: *standard output*
Time limit: 2 seconds
Memory limit: 512 mebibytes

Two heroes are fighting, whose names are hero 0 and hero 1 respectively.

You are controlling the hero 0, and your enemy is the hero 1. Each hero has five integer attributes: ATTACK, DEFENSE, POWER, KNOWLEDGE, and HEALTH. When two heroes battle with each other, they will take turns to attack, and your hero moves first. One hero can make **exactly one attack** in one turn, either a physical attack or a magical attack.

Assume their attributes are A_i, D_i, P_i, K_i, H_i ($0 \leq i \leq 1$). For hero i , its physical attack's damage is $C_p \cdot \max(1, A_i - D_{1-i})$, while its magical attack's damage is $C_m \cdot P_i$. Here, C_p and C_m are given constants.

After hero i 's attack, H_{1-i} will decrease by the damage of its enemy. If H_{1-i} is lower or equal to 0, the hero $(1 - i)$ loses, the hero i wins, and the battle ends.

Hero i can make magical attacks no more than K_i times in the whole battle.

Now you know your enemy is a Yog who is utterly ignorant of magic, which means $P_1 = K_1 = 0$, and he will only make physical attacks. You can distribute N attribute points into four attributes A_0, D_0, P_0, K_0 arbitrarily, which means these attributes can be any non-negative integers satisfying $0 \leq A_0 + D_0 + P_0 + K_0 \leq N$.

Given C_p, C_m, H_0, A_1, D_1 , and N , please calculate the maximum H_1 such that you can build hero 0 and fight so that it wins the game.

Input

The first line contains an integer T ($1 \leq T \leq 10^4$), the number of test cases. Then T test cases follow.

The first and only line of each test case contains six integers $C_p, C_m, H_0, A_1, D_1, N$ ($1 \leq C_p, C_m, H_0, A_1, D_1, N \leq 10^6$), the attributes described above.

Output

For each test case, print a line with one integer: the maximum enemy health such that it is possible to win.

Example

standard input	standard output
2	4
1 1 4 5 1 4	25
2 5 1 9 9 6	