Problem B. Torch

Input file:	`standard input`
Output file:	`standard output`
Time limit:	4 seconds
Memory limit:	512 megabytes

Prof. Pang and Prof. Shou go to explore a cave together. Prof. Pang walks ahead of Prof. Shou.

Each of them has a torch for illumination. The torches need fuel to burn. Prof. Pang's torch can burn for a_1 seconds once it has been refilled, and it takes b_1 seconds to refuel the torch after it burns out. Prof. Shou's torch can burn for a_2 seconds once it has been refilled, and it takes b_2 seconds to refuel the torch after it burns out. The person who is refueling the torch cannot walk simultaneously. For safety reasons, they cannot refuel the torch until the fuel runs out.

Because Prof. Pang is too fat and the cave is too narrow, Prof. Shou cannot surpass Prof. Pang during the exploration, which means that Prof. Shou is at least 1 unit behind Prof. Pang.

Each of them can walk forward a distance of 1 unit per second when his torch is burning. Every second, Prof. Pang moves first, then Prof. Shou does. In order to get to their destination earlier, they will move as long as they can walk forward.

Now Prof. Shou has n questions, and for the i-th question, he wants to know that at time q_i, how many units of the distance he has moved forward from the starting point? Prof. Shou starts 1 unit behind Prof. Pang. The initial time is 0. Both Prof. Pang and Prof. Shou refueled the torch before the initial time.

Input

The first line contains one integer T ($1 \le T \le 10^5$), the number of test cases.

For each test case, the first line contains 5 integers a_1, b_1, a_2, b_2, n ($1 \le a_1, b_1, a_2, b_2, n \le 10^6$) denoting the time Prof. Pang's torch can burn, the time for Prof. Pang to refuel his torch, the time Prof. Shou's torch can burn, the time for Prof. Shou to refuel his torch, and the number of Prof. Shou's queries. Each of the next n lines describes a query. Query i is denoted by one integer q_i ($1 \le q_i \le 10^{16}$).

It is guaranteed that over all test cases, each of the following numbers is no more than 10^6:

- the sum of a_1,
- the sum of a_2,
- the sum of b_1,
- the sum of b_2,
- and the sum of n.

Output

For each query, print one line containing the answer – the number of units that Prof. Shou has walked forward from the starting point.

Example

standard input	standard output
3 2 3 2 4 2 7 8 1 1 1 1 2 3 4 9 7 10 3 5 5 10 20 30 50	3 4 2 2 5 9 13 18 28