Blood Memories

Input file:	`standard input`
Output file:	`standard output`
Time limit:	3 seconds
Memory limit:	1024 megabytes

Panda is playing a game, in which he is fighting the Demon's army with a party of n characters, numbered 1 to n. Each round begins with m Ap (energy points) available to the party.

Each character i has a skill that deals a_i damage and normally costs c_i Ap. In any round, each character can choose to either use their skill once or do nothing with zero cost. The total Ap cost of all skills used in a round must not be more than m. Any remaining Ap at the end of the round is discarded, and the party is fully refreshed with m Ap for the next round.

Due to the unique mechanics of this game, if a character uses their skill in a round, its Ap cost for the next round becomes $c_i + k$. If the character continues using the skill in consecutive rounds, the cost stays at $c_i + k$ (it does not increase further). If a character does not use their skill in a round, the skill cost will reset to c_i for the very next round.

Panda wants to maximize the total damage dealt over a total of R rounds. Find the maximum possible total damage.

Input

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

For each test case, the first line contains four integers n, m, k, R ($1 \le n \le 6, 1 \le m, k \le 10^3, 1 \le R \le 10^9$). n is the number of characters in the party, m is the Ap gained at the start of each round, k the temporary Ap cost increase when a skill is used, and R is the total number of rounds.

For the next n lines, each line contains two integers a_i, c_i ($1 \le a_i \le 10^6$, $1 \le c_i \le m$), which are the damage and initial Ap cost for character i.

Output

Output a single integer, denoting the maximum total damage that can be achieved.

Example

standard input	standard output
3 3 7 1 5 59 3 13 2 81 4 5 14 2 9 66 8 20 2 25 4 39 6 57 7 4 13 7 16 18 2 13 5 33 4 7 1	490 939 741