

Simulated Universe

Input file: standard input
Output file: standard output
Time limit: 1 second
Memory limit: 1024 megabytes

“Star Rail” is a mixture of two traditional logic puzzle genres: “Star Battle” and “Rail Pool”.

— Star Rail, CCBC 14

Sugar is playing his favorite game, Honkai: Star Rail. He is playing a game mode called Simulated Universe. The gameplay revolves around collecting upgrades and artifacts, known as Blessings and Curios, to enhance the team’s power and completing stages containing progressively more difficult enemies.

At the start of each playthrough, the player may choose a Path to follow, which will grant Path-specific buffs and an increased chance to obtain Blessings of the corresponding Path. During the playthrough, the player will complete different types of Domains (Combat, Occurrence, Transaction, Encounter, Elite, Respite) with the end goal of arriving at the final Boss Domain and defeating the boss.

Blessings will be accumulated through various means, which provide a variety of passive effects and buffs to the team. Blessings can be upgraded through Occurrences or within Respite Domains to enhance their effects. A currency known as Cosmic Fragments will also be obtained which can be used in certain Random Events or to upgrade Blessings.

Sugar is playing in low difficulty mode, so the scene has been greatly simplified. **We strongly recommend that you carefully read the following content, especially for players who are very familiar with the game. The game mode scene described in the prompt is quite different from the original game, so please discern carefully.** There are n domains in this playthrough, and the type of each domain is occurrence. Each domain provides **exactly one** of the following two rewards:

- Blessing: Sugar gains a Blessing, and his attack value increases by 1 immediately. Sugar can choose to upgrade this Blessing with 1 Cosmic Fragment if he has at least 1 Cosmic Fragment, and the upgraded Blessing can increase his attack value by 2 instead. A Blessing can only be upgraded no more than once.
- Curio: Sugar gains a Curio. There are two types of Curio, where **exactly one** of them can be chosen. The first type of Curio obtained in the i -th domain can upgrade no more than a_i un-upgraded Blessings obtained before the i -th domain, and the second type of Curio obtained in the i -th domain can provide b_i Cosmic Fragments immediately.

Note that the Cosmic Fragments **cannot** be used to upgrade the Blessings that Sugar has already obtained. It can only be used to upgrade the Blessings at the domain providing Blessing Rewards, and can only be used to upgrade the Blessing he has obtained in that domain. And the first type of Curio **can only** upgrade Blessings Sugar has already obtained.

Sugar starts this playthrough with 0 Blessings, 0 Cosmic Fragments and 0 attack value. Please help him calculate his maximum attack value after he passes through the n domains.

Input

The input contains multiple test cases, the first line contains an integer t ($1 \leq t \leq 10^3$), denoting the number of test cases.

For each test case, the first line contains an integer n ($1 \leq n \leq 8 \cdot 10^3$), denoting the number of domains.

The i -th of the following n lines starts with a single character t_i ($t_i \in \{\mathbf{B}, \mathbf{C}\}$), denoting the reward type of the domain, which is a Blessing or a Curio. If $t_i = \mathbf{C}$, then two integers a_i, b_i ($1 \leq a_i, b_i \leq n$) follow, denoting the Curio in the format described above.

It is guaranteed that the sum of n over all test cases does not exceed $8 \cdot 10^3$.

Output

For each test case, output one integer in one line, denoting Sugar's maximum attack value after he passes through the n domains.

Example

standard input	standard output
2	2
2	8
B	
C 1 1	
6	
B	
B	
C 2 1	
C 1 2	
B	
B	