Counting Boolean Parenthesizations

<u>Team ID:</u> 24

<u>Topic:</u> dynamic programming

<u>Description:</u>　　　　　(文末有<u>**中文敘述**</u>和<u>**提示**</u>,簡短很多)

For solving our problem, you will be given some boolean expressions which are strings consisting of **'true'**, **'false'**, **'and'**, **'or'**, and **'xor'**. Count the numbers of ways to parenthesize each expression such that the boolean value of each string can be true. For example, there are 2 ways to parenthesize **'true and false xor true'** such that the whole string with the parenthesization can be computed as true:

　　　true and false xor true
　　　true and (false xor true)

Therefore, in this example, you should output 2

However, to avoid counting the same parenthesization several times, different parenthesizations with the same order or priority of computing their boolean value should be considered the same one.

For example,

　　　true and false xor true
　　　(true and false xor true)
　　　true and (false) xor true
　　　(true and false) xor true
　　　((true and false)) xor true　　are the same parenthesization, which can only be
counted as one.

Input:

　　　There's an integer, N, in the first line.

　　　For the next N lines, there's a W and a Boolean expression consists of W words (we promise you each line will start and end with a **'true'** or **'false'**, and between any two boolean operators there will also be a **'true'** or **'false'**)

input sample:

3

5 true and false xor true

3 true and true

9 false or true or true or false xor true

output:

　　　You should output the number of ways to parenthesize each expression such that the boolean value of each line can be true.

output sample:

2

1

7

Time and Memory Limits:

Time Limits : 2s，There's no memory limits！

Chinese Description and Hints:

就是，先給你一個**整數**N，之後的N行每一行都有**一個W**和一串布林**運算**，**W會告訴你**那串布林運算有幾個元素。對於每一行，輸出有幾種上括號的方法可以讓那行的布林運算等於'true'

另外，如果有不同上括號的方法導致了同一種運算時的順序，那這些方法總共只能算是同一種。

所以，**true and false xor true**，**(true and false xor true)，(true) and (false) xor true,**
(true and false) xor true，**((true and false)) xor true**

都只能算是同一種上**括號**的方法

提示就是，谷歌可以幫助你解這題！