**题目使用文件输入输出**

**提交程序文件名每道题有写在题目名字右侧，读入文件xxx.in，输出文件xxx.out，提交文件xxx.cpp**

**一15 二15 三10 四10**

1 maxflow

Farmer John has installed a new system of N−1N−1 pipes to transport milk between the NN stalls in his barn (2≤N≤50,0002≤N≤50,000), conveniently numbered 1…N1…N. Each pipe connects a pair of stalls, and all stalls are connected to each-other via paths of pipes.

FJ is pumping milk between KK pairs of stalls (1≤K≤100,0001≤K≤100,000). For the iith such pair, you are told two stalls sisi and titi, endpoints of a path along which milk is being pumped at a unit rate. FJ is concerned that some stalls might end up overwhelmed with all the milk being pumped through them, since a stall can serve as a waypoint along many of the KK paths along which milk is being pumped. Please help him determine the maximum amount of milk being pumped through any stall. If milk is being pumped along a path from sisi to titi, then it counts as being pumped through the endpoint stalls sisi and titi, as well as through every stall along the path between them.

INPUT FORMAT (file maxflow.in):

The first line of the input contains NN and KK.

The next N−1N−1 lines each contain two integers xx and yy (x≠yx≠y) describing a pipe between stalls xx and yy.

The next KK lines each contain two integers ss and tt describing the endpoint stalls of a path through which milk is being pumped.

OUTPUT FORMAT (file maxflow.out):

An integer specifying the maximum amount of milk pumped through any stall in the barn.

SAMPLE INPUT:

5 10

3 4

1 5

4 2

5 4

5 4

5 4

3 5

4 3

4 3

1 3

3 5

5 4

1 5

3 4

SAMPLE OUTPUT:

9

FJ给他的牛棚的N(2≤N≤50,000)个隔间之间安装了N-1根管道，隔间编号从1到N。所有隔间都被管道连通了。

FJ有K(1≤K≤100,000)条运输牛奶的路线，第i条路线从隔间si运输到隔间ti。一条运输路线会给它的两个端点处的隔间以及中间途径的所有隔间带来一个单位的运输压力，你需要计算压力最大的隔间的压力是多少。

2 cardgame

Bessie the cow is a huge fan of card games, which is quite surprising, given her lack of opposable thumbs. Unfortunately, none of the other cows in the herd are good opponents. They are so bad, in fact, that they always play in a completely predictable fashion! Nonetheless, it can still be a challenge for Bessie to figure out how to win.

Bessie and her friend Elsie are currently playing a simple card game where they take a deck of 2N2N cards, conveniently numbered 1…2N1…2N, and divide them into NN cards for Bessie and NN cards for Elsie. The two then play NN rounds, where in each round Bessie and Elsie both play a single card. Initially, the player who plays the highest card earns a point. However, at one point during the game, Bessie can decide to switch the rules so that for the rest of the game, the player who plays the lowest card wins a point. Bessie can choose not to use this option, leaving the entire game in "high card wins" mode, or she can even invoke the option right away, making the entire game follow the "low card wins" rule.

Given that Bessie can predict the order in which Elsie will play her cards, please determine the maximum number of points Bessie can win.

INPUT FORMAT (file cardgame.in):

The first line of input contains the value of N (2≤N≤50,0002≤N≤50,000).

The next N lines contain the cards that Elsie will play in each of the successive rounds of the game. Note that it is easy to determine Bessie's cards from this information.

OUTPUT FORMAT (file cardgame.out):

Output a single line giving the maximum number of points Bessie can score.

SAMPLE INPUT:

4

1

8

4

3

SAMPLE OUTPUT:

3

Here, Bessie must have cards 2, 5, and 6, and 7 in her hand, and she can use these to win at most 3 points. For example, she can defeat the 1 card and then switch the rules to "low card wins", after which she can win two more rounds.

贝西和她的朋友艾尔西正在玩这个简单的纸牌游戏。游戏有2N张牌，牌上的数字是1到2N。把这些牌分成两份，贝西有N张，艾尔西有另外N张。接下来她们进行N轮出牌，每次各出一张牌。一开始，谁出的牌上的数字大，谁就获得这一轮的胜利。贝西有一个特殊权利，她可以在任意一个时刻把原本数字大的获胜的规则改成数字小的获胜，这个改变将会一直持续到游戏结束。特别的，贝西可以从第一轮开始就使用小牌获胜的规则，也可以直到最后一轮都还杂使用大牌获胜的规则。

现在，贝西已经知道了艾尔西出牌的顺序，她想知道她最多能够赢多少轮。

3 haybales

Farmer John is trying to hire contractors to help rearrange his farm, but so far all of them have quit when they saw the complicated sequence of instructions FJ wanted them to follow. Left to complete the project by himself, he realizes that indeed, he has made the project perhaps more complicated than necessary. Please help him follow his instructions to complete the farm upgrade.

FJ's farm consists of NN fields in a row, conveniently numbered 1…N1…N. In each field there can be any number of haybales. Farmer John's instructions contain three types of entries:

1) Given a contiguous interval of fields, add a new haybale to each field.

2) Given a contiguous interval of fields, determine the minimum number of haybales in a field within that interval.

3) Given a contiguous interval of fields, count the total number of haybales inside that interval.

INPUT FORMAT (file haybales.in):

The first line contains two positive integers, NN (1≤N≤200,0001≤N≤200,000) and QQ (1≤Q≤100,0001≤Q≤100,000).

The next line contains NN nonnegative integers, each at most 100,000, indicating how many haybales are initially in each field.

Each of the next QQ lines contains a single uppercase letter, either M, P or S, followed by either two positive integers AA and BB (1≤A≤B≤N1≤A≤B≤N), or three positive integers AA, BB, and CC (1≤A≤B≤N1≤A≤B≤N; 1≤C≤100,0001≤C≤100,000). There will be three positive integers if and only if the uppercase letter is P.

If the letter is M, print the minimum number of haybales in the interval of fields from A…BA…B.

If the letter is P, put CC new haybales in each field in the interval of fields from A…BA…B.

If the letter is S, print the total number of haybales found within interval of fields from A…BA…B.

OUTPUT FORMAT (file haybales.out):

A line in the output should appear in response to every 'M' or 'S' entry in FJ's instructions.

SAMPLE INPUT:

4 5

3 1 2 4

M 3 4

S 1 3

P 2 3 1

M 3 4

S 1 3

SAMPLE OUTPUT:

2

6

3

8

FJ像雇佣几个人在他的农场里帮忙，他需要进行很多种操作，请你帮他搞定。

FJ的农场有N块田地排长一行，编号是从1到N的。每一块田地都有很多草包。FJ要进行下面几种操作：

1)给定一段连续的田地，给每一个田地都增加一些新的草包。

2)给定一段连续的田地，找出草包最少的田地有多少草包。

3)给定一段连续的田地，统计一共有多少草包。

4 tselect

