

Problem PASSWORDHINTS: Password hints

The MI6 (secret intelligence service) has several sections that do criminal investigations, e.g. for special agents like James Bond. The current target is an arms factory, or more precisely, the password of its main server. The password is long and complicated; to be able to reconstruct the password once forgotten, there are a lot of password hints in the factory on various objects. One section of MI6 hopefully found all of these hints. The job of your section is to resolve them.

Each hint is an equation of integers that looks like $a + b = c$ or $a - b = c$, which can be wrong. Now the equation is interpreted with matches as shown in the pictures (without leading zeros).



Figure 1: Numbers and symbols represented by matches.

You have to remove a given number of R matches and you have to insert a given number of I matches. It is allowed to remove or add complete digits on the left side of the numbers (leading zeros are still not allowed). It is not allowed to insert matches at positions where matches are removed. After removal and insertion of the matches the equation has to be correct. This means that the equation has the shape $a + b = c$ or $a - b = c$ and the represented numbers are positive integers less than 1 000 and the operation leads to the result on the right side of the equation.

If you supply us the needed information, then a third section of MI6 can reconstruct the actual correct password. For security reasons, we are not allowed to tell you how this is done, but for sure your help is necessary to attack the target.

Input

The first line of input contains a single integer H : the number of hints ($0 < H \leq 20$). The following H lines each contain an equation and the two integers R and I as specified above. The equations contain no spaces. a , b and c are positive integers less than 1 000, while R and I are non-negative integers less than 100.

Output

For each hint in the input produce two lines of output. The first line should contain the number of different correct equations that can be produced by the current hint. The second line should contain the smallest equation that can be generated by the current hint, or "IMPOSSIBLE" if no equation fulfills the given conditions. The smallest equation is the equation which has the smallest first number (in case of a tie the smallest second and third number, respectively).

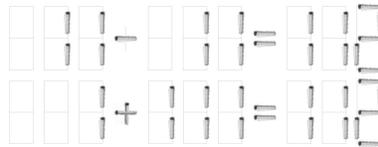


Figure 2: Last password hint (input and correct output).

Sample Input 1

```
5
1+1=2 0 0
1+2=1 0 0
2+1=1 1 0
1+1=8 0 1
11-11=112 2 3
```

Sample Output 1

```
1
1+1=2
0
IMPOSSIBLE
1
2-1=1
2
1+7=8
2
1+111=112
```