



## 3802 - Operator Jumble

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A popular word puzzle asks you to punctuate the following word sequence so that it makes sense.

``James while John had had had had had had had had had had had a better effect on the teacher."

The answer is: James, while John had had ``had", had had ``had had"; ``had had" had had a better effect on the teacher.

Similarly, number sequences that don't make sense by themselves can be made into correct equations by the addition of appropriate arithmetic operators and the = sign.

For example,

5 7 4 = 3 is more meaningful when written as

$$5 + 7 / 4 = 3.$$

We would like you to write a program to insert appropriate operators (+ , - , \* and /) into the integer sequences supplied by us so that each sequence is transformed into a mathematically correct equation.

Each number in the input sequence must be used exactly once, but each operator may be used zero to many times. The expression should be read from left to right, with the output of the first operation being input of the second and so on, to calculate the target number. It is possible that no expression can generate the target number. It is also possible that many expressions can generate the target number. In this case, the 'correct' solution will be the one where the operator sequence is in `alphabetic' order, where + comes first, then -, \* and / in that order. E.g.  $1 + 1 * 1$  comes before  $1 + 1 / 1$ .

There are three restrictions on the composition of the mathematical expression:

- the numbers in the expression must appear in the same order as they appear in the input.
- you are only allowed to use / in the expression when the result of the / operator will give a remainder of zero. Division by 0 is not allowed.
- you are only allowed to use an operator in the expression if its result after applying that operator is an integer from (- 32000...+ 32000) . The outer limits of this interval are not allowed.

### Input

The input has multiple test cases. The first line contains the number of test cases  $n$  .

Each subsequent line contains the number of integers in the sequence  $p$  , followed by  $p$  nonnegative integers, followed by the target integer. Each integer is separated by a space from the next. Note that  $0 < p \leq 100$  .

There may be duplicate numbers in the sequence. But all the numbers are less than 32000.

## Output

The output should contain an expression, including all  $p$  numbers and  $(p - 1)$  operators plus the equals sign and the target. Do not include spaces in your expression. If there is no expression possible output ``NO EXPRESSION" (without the quotes).

## Sample Input

```
3
3 5 7 4 3
2 1 1 2000
5 12 2 5 1 2 4
```

## Sample Output

```
5+7/4=3
NO EXPRESSION
12+2-5-1/2=4
```

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