

Reverse Polish Notation



Reverse Polish notation is a mathematical notation in which every operator follows all of its operands.

Implement a Reverse Polish Notation calculator, with the following operations:

$+$, $-$, \times , \div

x : binary operator equivalent to $n_1^2 + n_2$ (e.g. $5\ 2\ x = 27$)

y : unary operator equivalent to $2n + 1$ (e.g. $6\ y = 13$)

z : ternary operator equivalent to $n_1 + 2n_2 + 3n_3$ (e.g. $1\ 2\ 3\ z = 14$)

All operations should be done on integers

You should use the symbols $+$ $-$ $*$ $/$ x y z for the operators.

Input Format

T
 t_0
 t_1
 t_2
...
 t_{T-1}

Where T is the number of different reverse polish notation problems you need to solve, and t_i is the i th problem

If the string is not parseable, or it leaves extra symbols, output NO

Output Format

a_0
 a_1
...
 a_{T-1}

Sample Input

2
3 4 - 5 +
3 6 /

Sample Output

4
0

Explanation

For the first one we do 3-4, getting the value of -1, then add 5, giving us the final value of 4.

For the second one we do 3/6, giving us 0.