Q1.

Input Format

The input begin with an integer n on a line, which means that there are n test cases.
And the first character of each following row is the command.

p : print the quadratic formula.
+ : add two quadratic formulas.
d : find the discriminant of the quadratic formula and print the root(s) of it (including complex root).

Each quadratic formula contains three integers.
E.g. ax^2+bx+c
which a, b, c are three integers. ($a \neq 0$)

Constraints

Use **class** and **switch** to implement.

Output Format

You must output the result after doing the calculation.
If the formula is x^2+2x+1, then you have to print 1x^2+2x+1.

Sample Input

```
7
p 8 7 0
p 1 2 3
p 5 0 7
+ 6 5 1 -8 4 -6
d 1 -3 2
d 1 2 1
d 1 2 3
```

Sample Output

```
8x^2+7x+0
1x^2+2x+3
5x^2+0x+7
-2x^2+9x-5
There are two roots: 2, 1
There is a double root: -1
There are two complex roots: -1 + 1.41421i, -1 - 1.41421i
```