



Y - Johnny and the Quadratic Equation

Johnny recently learned about this whole quadratic equation thing. Being an avid young programmer, he immediately wrote the following code that was supposed to help in his homework:

```
#include<cstdio>
int main() {
    unsigned int a,b,c,x=0;
    scanf("%u %u %u",&a,&b,&c);
    do {
        if (a*x*x+b*x+c==0) {
            puts("YES");
            return 0;
        }
        x++;
    } while(x);
    puts("NO");
    return 0;
}
```

where all calculations are performed on unsigned 32-bit integers (in other words, modulo 2^{32}). But, well, it turned out that this code runs rather slow, even on his recently updated monster gaming rig. Maybe you could help him?

Input

The input contains several test cases. The first line contains an integer t ($t \leq 10^4$) denoting the number of test cases. Then t tests follow, each of them consisting of three space separated integers a , b and c ($0 \leq a, b, c < 2^{32}$).

Output

For each test case output the answer of the program above.

Example

Input	Output
3	YES
948 43958 1429912782	NO
95348 54988 345335	YES
943428 4353958 3444096692	