#include<stdio.h>

#include<math.h>

int main(){

    printf("\*\*\*\*\*\*     let the age of 1st inmate is x     \*\*\*\*\*\*\n");

    printf("\*\*\*\*\*\*     and let the age of 2nd inmate is y     \*\*\*\*\*\*\n");

    printf("\n\*\*\*\*\*\n");

    printf("first inmate has subtracted age so the equation is : x-y=44\n");

    printf("second inmate has multiply the ages so the equation is  : xy=1280\n");

    printf("after simplify the quadratic equation is : x\*x-44x-1280=0 ");

    printf("\n\*\*\*\*\*\n");

    float a,b,c,r1,r2,d;

    printf("enter the coffcients of a,b,c respectively form above quadratic equation: ");

    scanf("%f %f %f",&a,&b,&c);

    d=b\*b-4\*a\*c;

    r1 = sqrt (d);

    if (d>0){

      r1 = (-b+sqrt (d)) / (2\*a);

    //r2 = (-b-sqrt (d)) / (2\*a);   we ignore the negative value because age can't be -ive

      printf("\n\*\*\*\*\n");

      printf("the age of 1st inmate is: = %f\n", r1);

      printf("the age of 2nd inmate is : = %f\n",1280/r1);

    }

    else if (d==0){

      r1 = -b/(2\*a);

      r2 = -b/(2\*a);

      printf ("roots are equal =%f %f", r1, r2);

    }

    else

      printf("Roots are imaginary");

    return 0;

}