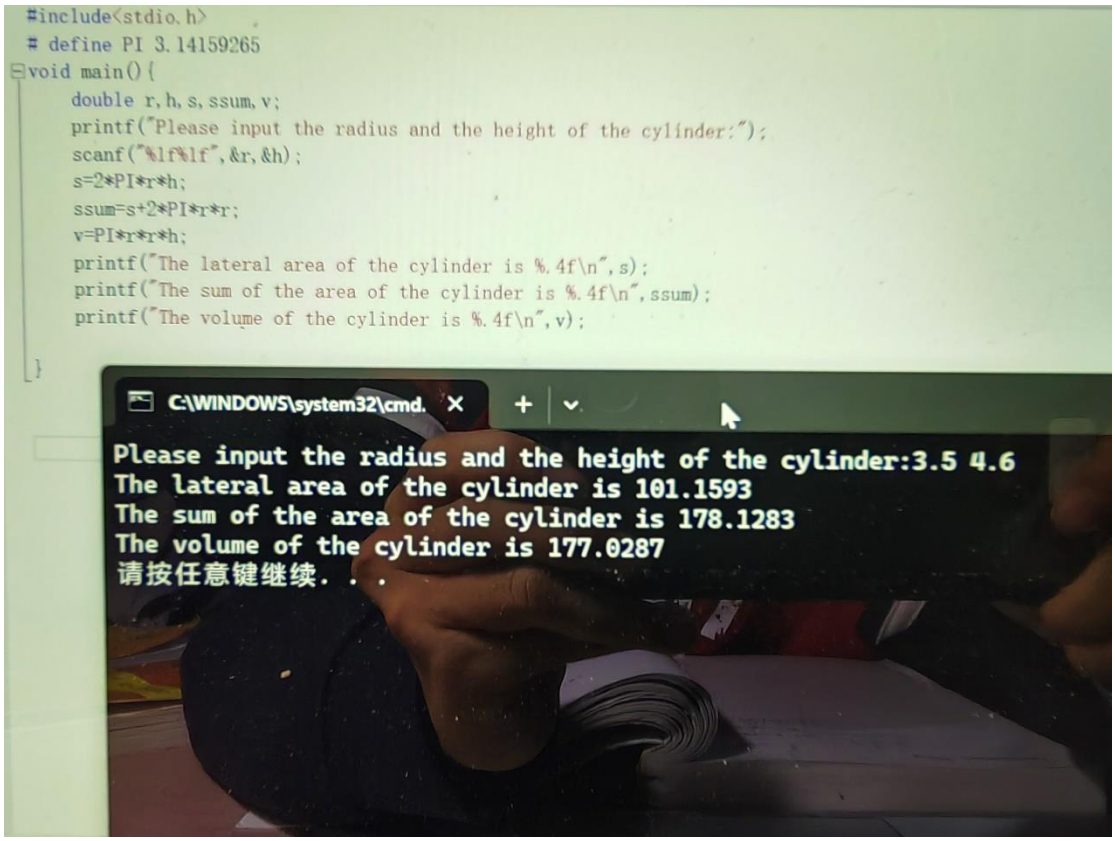
上机作业

1.

源代码

```
#include<stdio.h>
# define PI 3.14159265
void main(){
    double r,h,s,ssum,v;
    printf("Please input the radius and the height of the cylinder:");
    scanf("%lf%lf",&r,&h);
    s=2*PI*r*h;
    ssum=s+2*PI*r*r;
    v=PI*r*r*h;
    printf("The lateral area of the cylinder is %.4f\n",s);
    printf("The sum of the area of the cylinder is %.4f\n",ssum);
    printf("The volume of the cylinder is %.4f\n",v);

}
```



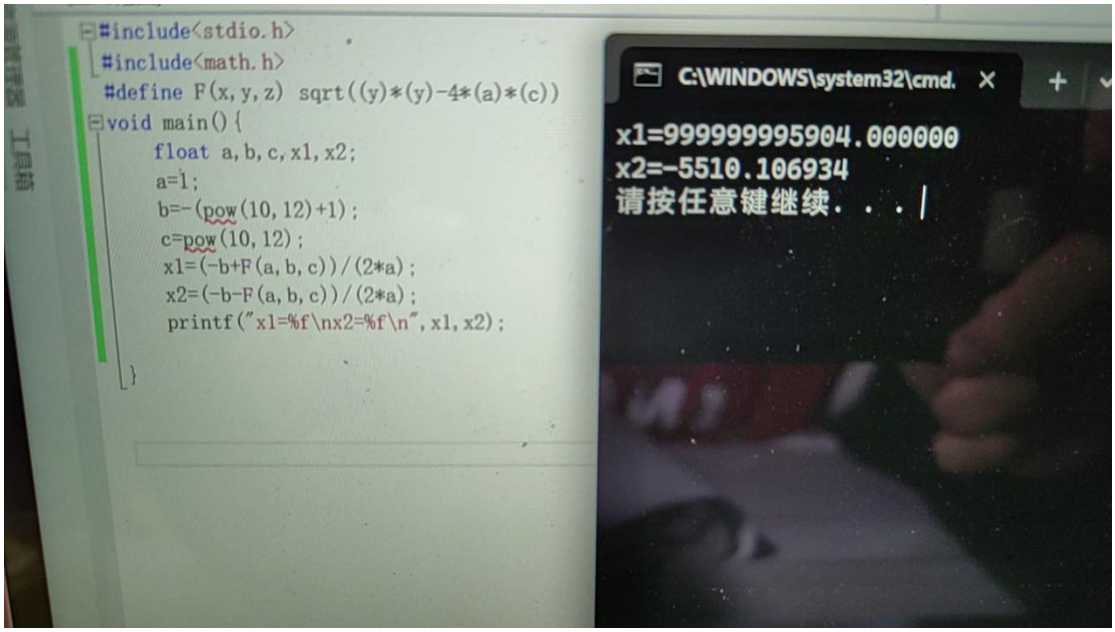
2.

(1) #include<stdio.h>

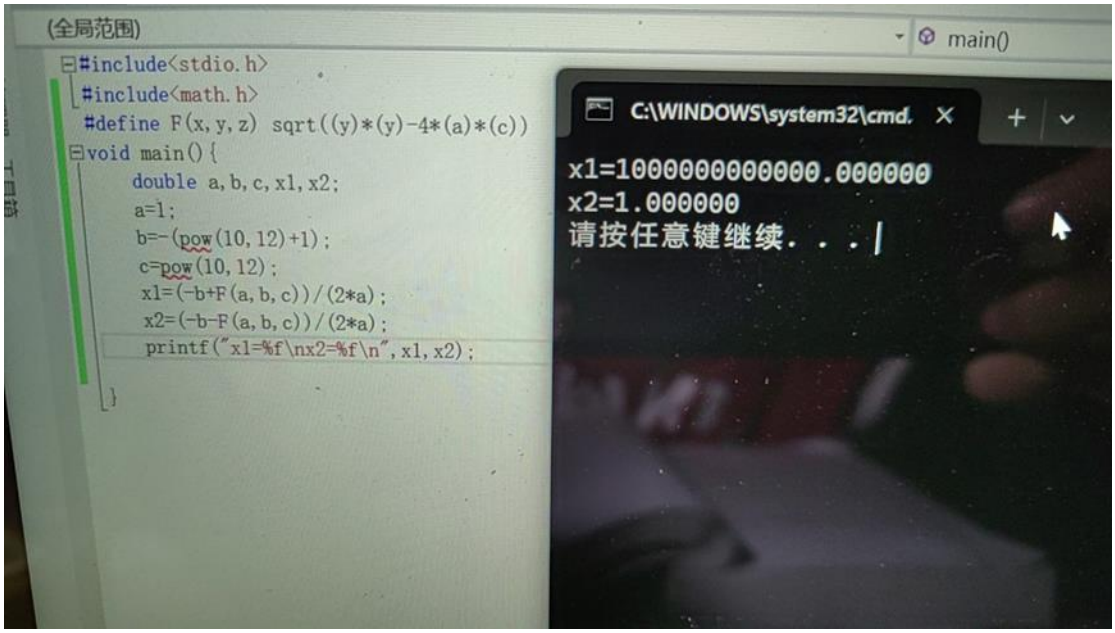
```
#include<math.h>
#define F(x,y,z) sqrt((y)*(y)-4*(a)*(c))
void main(){
```

```
    float a,b,c,x1,x2;
    a=1;
    b=-(pow(10,12)+1);
    c=pow(10,12);
    x1=(-b+F(a,b,c))/(2*a);
    x2=(-b-F(a,b,c))/(2*a);
    printf("x1=%f\nx2=%f\n",x1,x2);

}
```

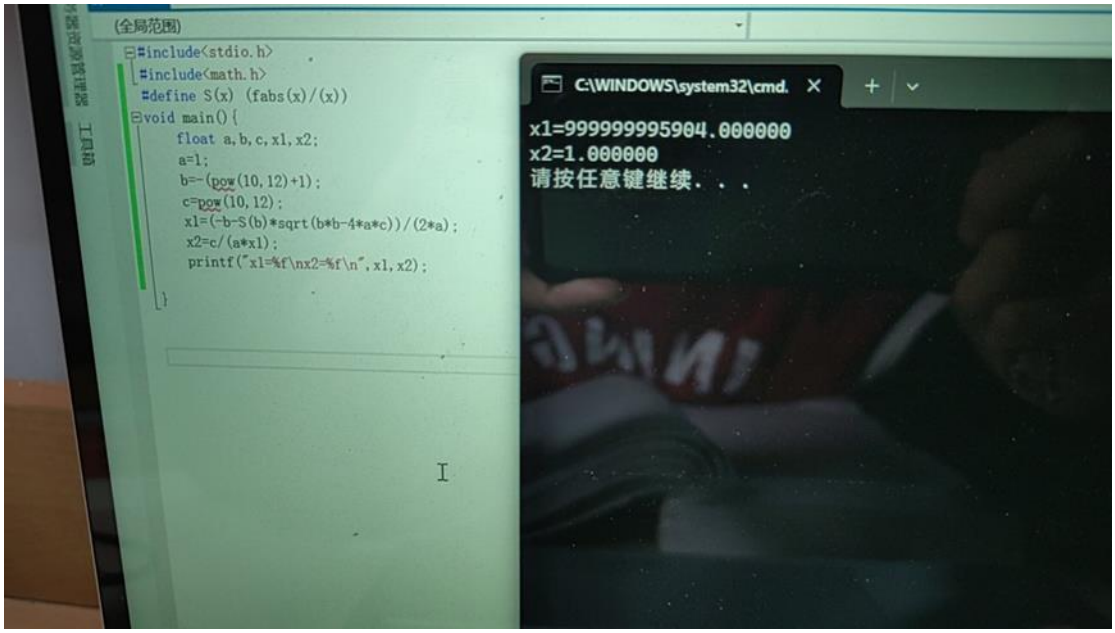


(2)
```
#include<stdio.h>
#include<math.h>
#define F(x,y,z) sqrt((y)*(y)-4*(a)*(c))
void main(){
    double a,b,c,x1,x2;
    a=1;
    b=-(pow(10,12)+1);
    c=pow(10,12);
    x1=(-b+F(a,b,c))/(2*a);
    x2=(-b-F(a,b,c))/(2*a);
    printf("x1=%f\nx2=%f\n",x1,x2);
}
```



(3)

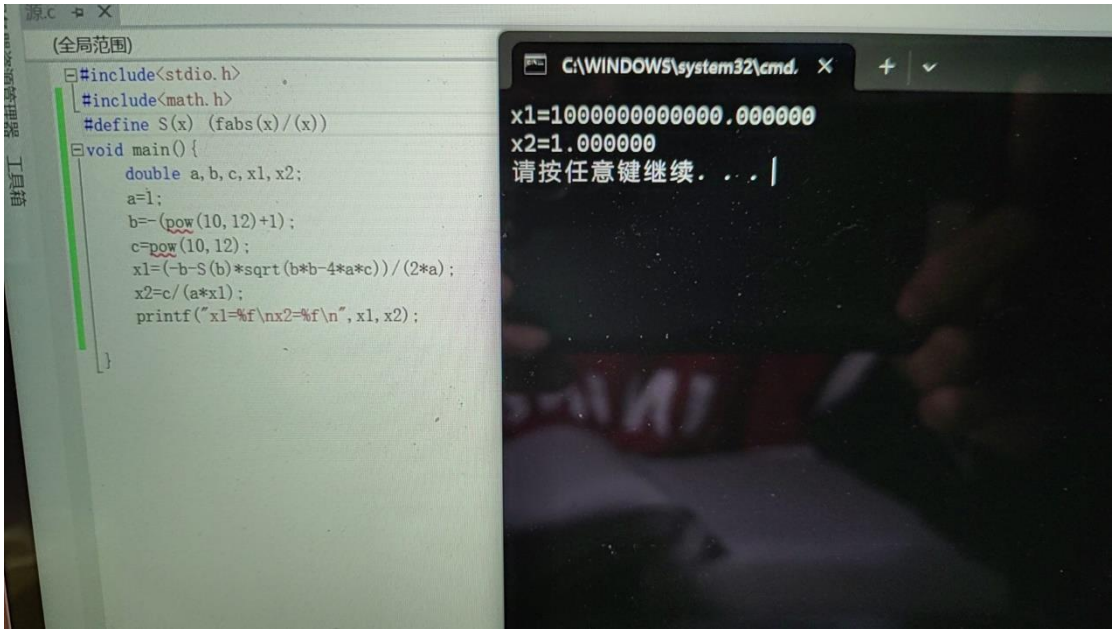
```
#include<stdio.h>
#include<math.h>
#define S(x) (fabs(x)/(x))
void main(){
    float a,b,c,x1,x2;
    a=1;
    b=-(pow(10,12)+1);
    c=pow(10,12);
    x1=(-b-S(b)*sqrt(b*b-4*a*c))/(2*a);
    x2=c/(a*x1);
    printf("x1=%f\nx2=%f\n",x1,x2);
}
```



(4)

```
#include<stdio.h>
#include<math.h>
#define S(x) (fabs(x)/(x))
void main(){
    double a,b,c,x1,x2;
    a=1;
    b=-(pow(10,12)+1);
    c=pow(10,12);
    x1=(-b-S(b)*sqrt(b*b-4*a*c))/(2*a);
    x2=c/(a*x1);
    printf("x1=%f\nx2=%f\n",x1,x2);

}
```



原因 double 型 64 位存储，精度高，存储 b，c 无误差
float 32 位存储，b，c 绝对值较大，用 float 存储会有误差