

0.1 函数的基本概念

以下的程序用于输出从键盘输入的一个实数的绝对值:

```
#include <stdio.h>
double absolute(double x);
int main()
{
    double u, v;
    printf("Please input a value:");
    scanf("%lf", &u);
    v = absolute(u);
    printf("The absolute value is %f.", v);
    return 0;
}

double absolute(double x)
{
    if (x >= 0)
        return x;
    else
        return -x;
}
```

```
#include <stdio.h>
#include <math.h>
double squareRoot(double x);
int main()
{
    double x;
    for (x = 1.0; x <= 10.0; x += 0.1)
        printf("%f\t%f\t%f\n", x, squareRoot(x), sqrt(x));
}

double squareRoot(double x)
{
    double r = x;
    const double eps = 0.000000001;
    while (fabs(r * r - x) >= eps)
    {
        r = 1.0 / 2 * (r + x / r);
    }
    return r;
}
```