第八次作业

第一题

f1不是虚函数,执行结果应该是B::f1;B::f1

第二题

```
#include <iostream>
   using namespace std;
 2
   class Shape {
   public:
4
        Shape() {}
       virtual ~Shape() {}
 6
7
       virtual double getC() = 0;
8
        virtual double getS() = 0;
9
   private:
10
11
   class Circle :public Shape{
12
13
   public:
        Circle(double radius):r(radius) {}
14
15
16
       ~Circle() {}
       virtual double getC() {
17
            return 2 * 3.14159 * r;
18
```

```
19
       virtual double getS() {
20
            return 3.14159 * r * r;
21
22
        }
23
   private:
24
       double r;
25
   };
   class Rect :public Shape{
26
    public:
27
28
        Rect(double length):len(length) {}
29
       ~Rect() {}
30
31
       virtual double getC() {
            return 4 * len;
32
33
        }
34
       virtual double getS() {
           return len * len;
35
36
        }
   private:
37
       double len;
38
39
   };
40
   int main() {
41
       Circle cir(3.0);
42
        Rect in(2.0 * 3.0 / 1.414), out(2 * 3.0);
43
        cout << "周长: " << cir.getC() << " " << "面积: " <<
44
    cir.getS() << endl;</pre>
        cout << "周长: " << in.getC() << " " << "面积: " << in.getS()
45
    << endl;
       cout << "周长: " << out.getC() << " " << "面积: " <<
46
   out.getS() << endl;</pre>
47 }
```

```
周长: 18.8495 面积: 28.2743
周长: 16.9731 面积: 18.0054
周长: 24 面积: 36
```

第三题

```
#include <iostream>
 1
    using namespace std;
    class Shape {
 3
    public:
 4
 5
        Shape() {}
        ~Shape() {}
 6
 7
        virtual float GetPerim() = 0;
        virtual float GetArea() = 0;
 8
9
    private:
10
11
    };
    class Circle :public Shape {
12
13
    public:
        Circle(float radius) :r(radius) {}
14
15
16
        ~Circle() {}
        virtual float GetPerim() {
17
18
            return 2 * 3.14159 * r;
19
        }
        virtual float GetArea() {
20
21
            return 3.14159 * r * r;
22
        }
23
    private:
24
        float r;
25
    };
26
    class Rectangle :public Shape {
27
    public:
28
        Rectangle(float length) :len(length) {}
29
30
        ~Rectangle() {}
31
        virtual float GetPerim() {
32
            return 4 * len;
33
        }
34
        virtual float GetArea() {
35
            return len * len;
36
        }
37
    private:
38
        float len;
39
    };
40
```

```
int main() {
41
      Circle cir(3.0);
42
       Rectangle in(2.0 * 3.0 / 1.414), out(2 * 3.0);
43
       cout << "周长: " << cir.GetPerim() << " " << "面积: " <<
44
   cir.GetArea() << endl;</pre>
        cout << "周长: " << in.GetPerim() << " " << "面积: " <<
45
    in.GetArea() << endl;</pre>
       cout << "周长: " << out.GetPerim() << " " << "面积: " <<
46
   out.GetArea() << endl;</pre>
47 }
```

周长: 18.8495 面积: 28.2743

周长: 16.9731 面积: 18.0054

周长: 24 面积: 36