

```
1  #define _USE_MATH_DEFINES // M_PI
2
3  #include <cmath>
4  #include "circle.h"
5
6  using namespace std;
7
8
9  Circle::Circle(double radius, const Color& color): mRadius(radius), mColor(color) {
10
11  }
12
13  Circle::Circle(const Color& color): Circle() {
14      setColor(color);
15  }
16
17  Circle::Circle(Color::Code code): Circle(Color(code)) {
18
19  }
20
21  Circle& Circle::setRadius(double radius) {
22      mRadius = radius;
23      return *this;
24  }
25
26  Circle& Circle::setColor(const Color& color) {
27      mColor = color;
28      return *this;
29  }
30
31  Circle& Circle::setColor(Color::Code color) {
32      setColor(Color(color));
33      return *this;
34  }
35
36  double Circle::getRadius() const {
37      return mRadius;
38  }
39
40  double Circle::getSurface() const {
41      return M_PI * pow(mRadius, 2);
42  }
43
44  Color Circle::getColor() const {
45      return mColor;
46  }
47
48  ostream& Circle::display(ostream& stream) const {
49      return stream << "Circle Radius : " << mRadius
50          << ", Color : " << mColor << endl;
51  }
52
53  ostream& operator<<(ostream& stream, const Circle& circle) {
54      return circle.display(stream);
55  }
56
```