

Philip Pesic

Week 4

September 11 2022

Week 4 Prog 7

Program 7 - Circle

You write ALL the code,

then run it - Produce the correct output. Turn in code and screen print of successful run, for credit

- * Write a class for a Circle

- * Input only the radius.

- * Write functions that Calculate the circles Circumference, Area and Diameter, and print out the value of the radius

- * Include error checking for radius, must be greater than zero.

Test all combinations

```
//  
// main.cpp  
// Week 4 Prog 7  
//  
// Created by Pippo Pesic on 9/11/22.  
//
```

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```
#include <iostream>
using namespace std;

class circle {
    int radius;
public:

    int getRadius(void) {return radius;}
    void setRadius(int inRadius) {radius = inRadius;}

    int calcCircumference() {
        int circumference = radius * 3.14159;
        return circumference;
    }

    int calcArea() {
        int area = 3.14159 * (radius^2);
        return area;
    }

    int calcDiameter() {
        int diameter = radius * 2;
        return diameter;
    }
};

int main() {
    circle c1;
    c1.setRadius(5);
    cout << "Radius = " << c1.getRadius() << endl;
    cout << "Circumference = " << c1.calcCircumference() << endl;
    cout << "Area = " << c1.calcArea() << endl;
    cout << "Diameter = " << c1.calcDiameter() << endl;

    circle c2;
    cout << "Radius = " << c2.getRadius() << endl;
    cout << "Circumference = " << c2.calcCircumference() << endl;
    cout << "Area = " << c2.calcArea() << endl;
    cout << "Diameter = " << c2.calcDiameter() << endl;

    cout << "Philip Pesic 9/11/22" << endl;
    return 0;
}
```

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The screenshot shows a C++ IDE with a project named "Week 4 Prog 7". The main source file, "main.cpp", contains the following code:

```
1 // Week 4 Prog 7
2
3 #include <iostream>
4 using namespace std;
5
6 class circle {
7     int radius;
8 public:
9     int getRadius(void) {return radius;}
10    void setRadius(int inRadius) {radius = inRadius;}
11
12    int calcCircumference() {
13        int circumference = radius * 3.14159;
14        return circumference;
15    }
16
17    int calcArea() {
18        int area = 3.14159 * (radius*2);
19        return area;
20    }
21
22    int calcDiameter() {
23        int diameter = radius * 2;
24        return diameter;
25    }
26 };
27
28 int main() {
29     circle c1;
30     c1.setRadius(5);
31     cout << "Radius = " << c1.getRadius() << endl;
32     cout << "Circumference = " << c1.calcCircumference() << endl;
33     cout << "Area = " << c1.calcArea() << endl;
34     cout << "Diameter = " << c1.calcDiameter() << endl;
35
36     circle c2;
37     cout << "Radius = " << c2.getRadius() << endl;
38     cout << "Circumference = " << c2.calcCircumference() << endl;
39     cout << "Area = " << c2.calcArea() << endl;
40     cout << "Diameter = " << c2.calcDiameter() << endl;
41
42     cout << "Philip Pesic 9/11/22" << endl;
43     return 0;
44 }
```

The output window shows the following results:

```
Radius = 5
Circumference = 15
Area = 21
Diameter = 10
Radius = 1
Circumference = 3
Area = 9
Diameter = 2
Philip Pesic 9/11/22
Program ended with exit code: 0
```

I learned: How to write complicated classes from one property