EE 1910

Dr. Johnson

Program 2

No capabilities beyond those discussed in class or in the notes are allowed

Write a program to calculate the following geometric values based on user inputs for R in centimeters.

a) Print the volume of a sphere of radius R
b) Print the area of the greatest cross section of the sphere
c) Print the length of the greatest arc that can be drawn on the sphere

Use the following input approach
```
float R;
…
// read in value for R
printf("\nEnter your value for R:");
scanf("%f", &R);
```
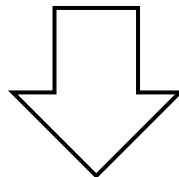
and output approach
```
float vol;
…
// prints values
printf("The volume of the sphere is: %f cm cubed\n", vol);
```

Turn in your code, and screenshots for values of R
      5   5.5   10.5

Start with something like this

```c
/*
 * programming_2.c
 *
 *  Created on: Nov 16, 2021
 *      Author: johnsontimoj
 */
/////////////////////////////////////
//
// Programming HW #2
//
// rev 0
//
/////////////////////////////////////
//
// Program to calculate sphere info
//
// Reads in a value for radius
// prints the volume, greatest cross section
// and greatest arc
//
// inputs: user input for R
// outputs: prints 3 values
//
/////////////////////////////////////

#include <stdio.h>                    // only needed when printing

#define PI 3.14159

int main(void){
    setbuf(stdout, NULL);  // disable buffering when printing

    // splash
    printf("\n\nProgramming HW 2\n");
    printf("Welcome to my sphere program\n\n");

    // your code here

    return 0;
}// end main
```
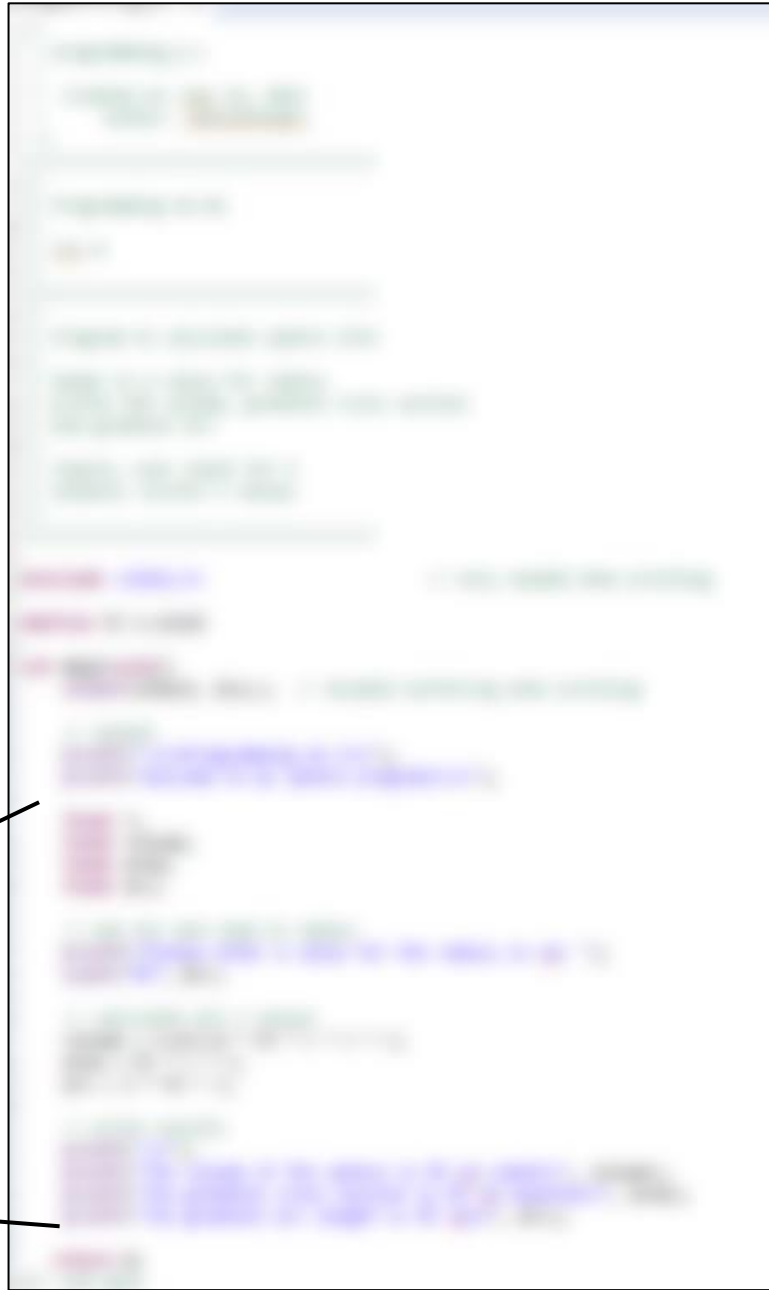
End up with something like this – check your values!

```
<terminated> (exit value: 0) HW_Cons_project.exe [C/C++ Appl

Programming HW 2
Welcome to my sphere program

Please enter a value for the radius in cm: 5

The volume of the sphere is 523.598328 cm cubed
The greatest cross section is 78.539749 cm squared
The greatest arc length is 31.415899 cm
```

```
<terminated> (exit value: 0) HW_Cons_project.exe [C/C++ Ap

Programming HW 2
Welcome to my sphere program

Please enter a value for the radius in cm: 5.5

The volume of the sphere is 696.909363 cm cubed
The greatest cross section is 95.033096 cm squared
The greatest arc length is 34.557491 cm
```

```
<terminated> (exit value: 0) HW_Cons_project.exe [C/C++ App

Programming HW 2
Welcome to my sphere program

Please enter a value for the radius in cm: 10.5

The volume of the sphere is 4849.043945 cm cubed
The greatest cross section is 346.360291 cm squared
The greatest arc length is 65.973389 cm
```