

EECS 10: Assignment 2

Professor Rainer Doemer

September 30, 2005

Due Monday 10 Oct 2005 at 12:00pm

1 Homework Problem 1: Exercise 2.14, pg. 52 [10 points]

In order to receive credit for this problem, answer this question in a file called `2.14.txt` and submit this file.

2 Homework Problem 2: Sphere Arithmetic [30 Points]

Design a program such that it asks for the radius of a sphere, and then outputs the diameter, surface area, and volume of that sphere. You may assume that $\pi = 3.14159$ and use floating point for the variable types instead of integer.

When executed, your program should look as follows:

```
Please enter the radius of the sphere: 42.0
The diameter is: ....
The surface area is: ....
The volume is: ....
```

All the files you should submit for this problem are: `sphere.c`, `sphere.txt`, `sphere.script`.

NOTE: For the text file, please explain what formulas you used and limit this to a few sentences only. For your script file, please compile your program and run it with a radius of 42.0 and 1.27.

3 Bonus: Cylinder Arithmetic [5 points]

Design a program such that it asks for the radius and height of a cylinder, and then outputs the surface area and volume of that cylinder. You may assume that $\pi = 3.14159$ and use floating point for the variable types instead of integer.

When executed, your program should look as follows:

```
Please enter the radius of the cylinder: 4.5
Please enter the height of the cylinder: 10.0
The surface area is: ....
The volume is: ....
```

All the files you should submit for this problem are: `cylinder.c`, `cylinder.txt`, `cylinder.script`.

NOTE: For the text file, please explain what formulas you used and limit this to a few sentences only. For your script file, please compile your program and run it using these two test cases: 1) radius = 4.5, height = 10.0; 2) radius = 12.8, height = 5.5.

4 Submission

Submission for these files will be similar to last week's assignment. The only difference is that you need to create a directory called **hw2/**. Put all the files listed above in that directory and run the **/ecelib/bin/turnin** command to submit your homework.