

## CS21 Assignment #2

Due Thursday, January 30<sup>th</sup>

Each script will go in a separate file. Please use the indicated filename for each program.

Be sure to include comments at the top of the program that include your name, class and a short description of the program. Use only the concepts covered in the class in all your assignments.

1. (sphere.py) Prompt the user for the radius of a sphere. Your program will calculate and display the sphere diameter, circumference, surface area and volume. I am providing a sample run. Your program should display exactly the same output (for the same provided input).
  - Look at the number of digits after the decimal point.
  - Observe that the sphere is not necessarily a whole number.
  - Declare PI as a constant.
  - If you do not remember the formulas, a quick google search will help!

```
Enter the radius: 4.36
Diameter: 8.7
Circumference: 27.4
Surface area: 238.8
Volume: 347.0
```

2. (temps.py) Given a Celsius temperature (C) , the equivalent Fahrenheit temperature (F) can be calculated:

$$F = 1.8C + 32$$

Using this formula, write a program that produces the following table:

Celsius	Fahrenheit
20	68.0
40	104.0
60	140.0
80	176.0

- The starting Celsius temperature is 20 and each subsequent temperature is 20 higher (use constants for these values).
- You must use `format` to print the numbers in the table. Format the Celsius temperature as an integer; the Fahrenheit as a float.
- We do not know how to format strings yet; you may use spaces (or tabs) in the strings to get the labels where you want them.
- Remember variable naming conventions. Use meaningful variable names, use underscores to separate words.

### For both programs:

It is expected that you will complete the same process of development that we walked through in class with the iPhone resale program. When you reach the point of having an algorithm (pseudocode), these steps will become the comments of your program as a starting point for writing code. Comment first, then code!

Any work you submit for this assignment should be authored entirely by yourself. Assistance is permitted from the instructor or teaching assistants only. All submitted programming assignments are subject to originality verification through software designed and used for the Measure Of Software Similarity (MOSS).