

Linux and Programming

Name _____ ID _____

Date _____ Section _____



Assignments:

- 1. Write the code in the file, `fortran_c_instruction.pdf`, both in Fortran and C. Then compile them to have the files, `volume.fdata` and `volume.cdata`. Submit the data tables.**
 - The file names must be “`volume.f`” for the Fortran code and “`volume.c`” for the C code.
 - For the Fortran code, compile as “`gfortran volume.f`” and execute as “`./a.out`”
 - For the C code, compile as “`gcc volume.c -lm`” and execute as “`./a.out`”
 - Copy and paste the results (numerical values) on the report. Make sure these are similar values.
- 2. Plot one of the above results with gnuplot. Submit the picture.**
 - Use either Fortran or C result obtained from part 1.
 - Refer to “`gnuplot_tutorial.pdf`” to plot the result. Do not forget to label the axes.
 - Copy and paste the picture on the report. Make sure if it is reasonable.
- 3. Modify the codes.**
 - Change the code for volumes of sphere into areas of sphere. The formula is $A = 4\pi r^2$.
 - Modify both Fortran and C codes, and compile and execute them. (You should change the file names, too.)
 - Make sure if the results are reasonable.
 - Submit the codes modified and the numerical values as part of the report.
- 4. Plot both volume and area results in one picture with gnuplot.**
 - Refer to “`gnuplot_tutorial.pdf`.”
 - Submit the picture as part of the report.