

Physics 262 Early Universe Cosmology

Homework 1

Assigned Tuesday Jan 10, 2017

Due Tuesday Jan 18, 2017, uploaded on the Canvas system

Please turn in your three plots PLUS files of the code you write.

1.1) Download the files Sample262.m, f1.m, f2.m and fSin.m from the Matlab section of the course website. Practice running Sample262.m. Modify the sample program so that all the constants (in the “par” structure) are double their original values and produce the corresponding plot. I strongly recommend you try this before the [Friday Jan 8](#) lecture so we can discuss any problems you might encounter.

1.2) Following the example of the sample program, write a new program that plots the following functions over the domain [0.1,1].

$$g_2(x) = \frac{A_2}{x^2}$$

$$g_3(x) = \frac{A_3}{x^3}$$

$$g_4(x) = \frac{A_4}{x^4}$$

with $A_2 = A_3 = A_4 = 1$

Please produce two plots. One with linear axes and one with logarithmic axes.

Hints:

- *Start Matlab by typing “Matlab” at the command prompt of the department teaching computers (in room 106).*
- *Click the “?” on the Matlab window to enter the extensive help system. When I originally learned Matlab I found the help system and especially the tutorials to be extremely helpful.*
- *You can also type “help ComandName” at the Matlab command prompt to learn more about a particular command.*
- *Probably everything you need to know for this assignment is modeled in the sample program.*
- *The Matlab command for log-log plots is “loglog”*