1. Using the scipy and numpy:

Re-work problem 1 from Exam 1, but now replace the *Simpson integration method* with *quad* from *scipy.integration*, and use *fsolve* in place of the *Secant method*. I’ve provided a copy of my solution to X1SP24\_1.py as a reference along with my numericalMethods.py file.

1. Using *matplotlib pyplot*:

In 2024, I assigned a homework problem to illustrate the connection between the Gaussian Normal Probability Density function and the Cumulative Distribution Function (see graphs below and attached file). For problem b of this homework, create a similar graph, but for the Truncated log-normal distribution after soliciting from the user values for the pre-sieved log-normal distribution and the sieved truncated log-normal distribution. Your graph should look like the one below where I’ve set the upper limit of integration and the corresponding F(D) at D=D\_Min+(D\_Max-D\_Min)\*0.75. I’ve included a copy of the program HW4a.py from Spring 2024. You program should produce the grey filled area, the axis labels, and the annotations on the upper plot.

* You should use numpy arrays for all of your work on this problem where arrays are needed.

A graph of a curve and a line

AI-generated content may be incorrect.