Assignment 06

Optimization – Golden search(Matlab)

The file gs_data.mat contains a set of 20 observations drawn from a mixture of two normal distributions.
Assuming that the two distributions have unit variance and symmetric means μ. And $-\mu$., the likelihood
function for these data is:

$$L(\mu) = \prod_i \frac{1}{\sqrt{2\pi}} \left[e^{-\frac{1}{2}(x_i - \mu)^2} + e^{-\frac{1}{2}(x_i + \mu)^2} \right]$$

(The product should be calculated over all observations)

a) Bracket the maximum of the function. What are your initial values of the points a,b,c ?

b) Using the golden-search optimization strategy find the MLE for μ.

c) How many function evaluations did you need for steps a and b?