NUM I 22-23: Assignment 7

Write a Fortran program which does the following task:

1) Ask the program user a first estimate x_0 and a precision ε

2) Finds the root **<u>for x < 0</u>** of the function

$$f(x) = (2\ \exp(x) - 2\ x^{**}3 - 3)$$

by using the Newton-Raphson method.

3) Write on an output file the values of the iteration step and that of the estimated root at each iteration step.

REQUIRED: implement the method as a subroutine.

BONUS QUESTION: Why had I to specify “for x < 0”? What are the “problematic” points for this function for the Newton method? How would you find all of them?

HELP: https://www.desmos.com/calculator

Send the source code to <ggiulian@ictp.it> by October 5th

Only the file that contains the source code is required possibly named as: Ass07.YourLastName.f90