Palestine Polytechnic University
Numerical Analysis Programming Project

Show that the given function has **exactly** one real solution

$$f(x) = \frac{x^3 + \sqrt[3]{x} - 1}{2 - x} \quad \text{for} \quad 0 \leq x \leq 1$$

Consider computing the solution of the function $f(x) = 0$ to within a tolerance 10^{-3} using the algorithms of the following:

1) Bisection Method

2) Fixed-Point Method

3) Newton's Method

4) Secant Method

Make sure you express the algorithm and the documented code for each case in you report.