

Exercise 01 (50%).

Implement a Python (2.x or 3.x) code that computes the following function when $x = 0.5$

$$f(x) = \frac{1}{\log^{10}(x^2 + x + 1)} \left[\sin \frac{1}{\frac{x}{x+1} \log^{10}(x^3 + x + 1)} \right]^{-1}.$$

Comment your implementation and justify/motivate your answer.

Exercise 02 (50%).

Implement a Python (2.x or 3.x) code that computes the following function when $x = 0$

$$f(x) = \frac{e^{-1/(3-x)^2} + e[4 - 3\cos(x-3)]^{1/5} - e^{\sqrt{4-x}}}{\sqrt{1 - \cos(x-3)}}.$$

Comment your implementation and justify/motivate your answer.