⇨ Used the simplified Newton's method :

a) the root of

$$f(x) = \exp(-x) - 10^{-9}$$

with $x^0 = 0$, and compare the results $(x^k, f(x^k))$ for the stopping criteria

(i) $|f(x^k)| < \epsilon_a$,

(ii) $|f(x^k)| < \epsilon_r |f(x^0)| + \epsilon_a$,

(iii) $|x^{k+1} - x^k| < \epsilon_a$,

(iv) $|x^{k+1} - x^k| < \epsilon_r |f(x^0)| + \epsilon_a$,

with all possible combinations of $\epsilon_a, \epsilon_r = 10^{-3}$