

9. [9 points]

Consider the function

$$f(x) = \begin{cases} -2e^{2x-2} & x \leq 1 \\ x^3 - 3x^2 & x > 1. \end{cases}$$

a. [5 points] Find all critical point(s) of $f(x)$. Write NONE if there are none.

Answer: Critical point(s) at $x =$ _____

b. [4 points] Find the x -coordinate of all global maxima and global minima of $f(x)$ on the interval $(-\infty, 4]$. For each, write NONE if there are none.

Answer: global max(es) at $x =$ _____

Answer: global min(s) at $x =$ _____