

Pick ONE of the following. Please put an X through the parts you do not want graded.

1. Find the **absolute maximum** and **absolute minimum** values of

$$f(x) = \frac{x}{x^2 + 1},$$

on the interval $[0, 2]$.

2. Find the **absolute maximum** and **absolute minimum** values of

$$f(t) = 2 \cos(t) + 2 \sin(t),$$

on the interval $[0, 2\pi]$.

3. Find all numbers c that satisfy the conclusion of the Mean Value Theorem for $f(x) = e^{-2x}$ on $[0, 3]$.

4. Suppose $3 \leq f'(x) \leq 5$ for all values of x . Show that $18 \leq f(8) - f(2) \leq 30$.