

OCTOBER 28, 2022

Example 2.38. Suppose that $f(x)$ is defined and differentiable everywhere. If $f'(x) > 0$ for all x is it true that

(88)
$$\lim_{x \rightarrow \infty} f(x) = \infty?$$

If not, try to find a counterexample.

Last time we covered the first derivative test. Let's do an example.

Example 2.39. Find the local and absolute extrema of the function

(89)
$$f(x) = \frac{x^2}{1 - x^2}$$

Example 2.40. Find the local and absolute extrema of the function
(90) $f(x) = x^x$
defined for $x > 0$.