

Written Homework 2 (4.2)

All derivatives should be done by hand, including appropriate simplification. All critical points should be found using algebra. Credit will not be given for correct answers without clear supporting work as you would do during a quiz or exam. Neatness and completeness of answers/ solutions are required for full credit.

1. $f(x) = \left(\frac{\ln x}{x}\right)^2$

A. Find the derivative and use it to find all critical points.

B. Find the global maximum and global minimum (if possible) on the following intervals:

i. $\left[\frac{1}{2}, 5\right]$

ii. $[5, 10]$

iii. $(0, \infty)$

2. $g(t) = t\sqrt{t+1}$

A. Find the derivative and use it to find all critical points.

B. Find the global maximum and global minimum (if possible) on the interval $[-1, 0]$.