

Math 180
Winter, 2009

1. Let $f(x) = \sqrt{x+1}\sqrt[3]{x+1}$.
 - a) Use Maple to find the derivative of the function.
 - b) Graph both the function and the derivative on the same set of coordinate axes.
 - c) Describe the behavior of the function that corresponds to any zeros of the graph of the derivative.

2. Let $f(x) = \ln(2x + x \sin x)$ on the interval $[1, 15]$.
 - a) Use Maple to plot the function.
 - b) Use Maple to find the derivative.
 - c) Find the interior points where the derivative is zero.
 - d) Use Maple to plot the derivative.
 - e) Find the interior points (if any) where the derivative does not exist.
 - f) Evaluate the function at all points found in parts (c) and (e) as well as at the endpoints of the interval.
 - g) Find the function's absolute extrema on the interval.
 - h) Describe the behavior of the function on the interval.

Lab is due on Thursday, January 29. Late labs lose one grade point for each class late.
The lab should include all graphs and work, as well as the answers to the questions asked.