

MATH 311: Homework 12

Due: April 21, 2021

1. Upcoming office hours are Monday April 19 3-4 and Wednesday April 21 9-10. [Note unusual time on Monday.]
2. Read Section 5.3 in Abbott.
3. Do exercises 4.4.2, 4.4.5, 4.4.6, and 4.4.10 in Abbott.
4. Do exercise 5.2.5 in Abbott. [Note that “twice-differentiable at 0” means that the derivative function exists on a neighborhood of 0 and is itself differentiable at 0.]
5. Calculate the derivatives of the following functions using the definition of the derivative.
 - $f(x) = \frac{3x+4}{2x-1}$ at $x = 1$.
 - $g(x) = x^2 \cos x$ at $x = 0$.
 - $h(x) = \frac{1}{x}$ at any $c \neq 0$.