

MAT 21A, Fall 2021
Homework 5

Due before 2:10 on Wednesday, November 3

Please write the homework solutions in connected sentences and explain your work. Mark the answers to each question. Scan or take pictures of your homework and upload it to Gradescope before due time.

Find the derivatives of the following functions:

1. $f(x) = \arctan(x^2)$
2. $f(t) = \left(\frac{3t+4}{5t-2}\right)^{10}$
3. $f(x) = \ln\left(\frac{x+1}{x-1}\right)$
4. A curve (called folium of Descartes) is defined by the equation

$$x^3 + y^3 - 9xy = 0$$

Find the slopes of tangent lines to this curve at points $(4, 2)$ and $(2, 4)$.