21-120: Differential and Integral Calculus
Recitation #13 Outline: 10/08/24

1. Calculate the absolute extrema of the function $f(x) = x^3 - 3x$ in the interval $[-2, 2]$.
2. Find the absolute extrema of the function $f(x) = | x^2 - 9 |$ in the interval $[-4, 4]$.
3. Calculate the absolute maxima and minima of the function $f(x) = \dfrac{\ln(x)}{x}$ in the interval $[1, 100]$.
4. Find the absolute maximum and absolute minimum values of $f(x) = \dfrac{x^2 - 4}{x^2 + 4}$ on the interval $[-4, 4]$.
5. Suppose the side length of a cube is measured to be 5 cm with an accuracy of 0.1 cm. Use differentials to estimate the error in the computed volume of the cube.