Math 108-01
Summer 2025
Dr. Lily Yen

Quiz 5

Show all your work

Name: _____
Number: _____
Signature: _____
Score: ___/10

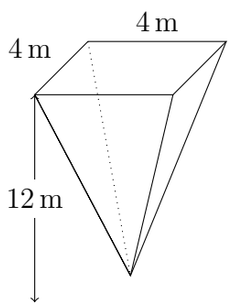
Problem 1: Use linear approximation to estimate $\sqrt[4]{15.99}$ to 4 decimal places.

Score: /3

Problem 2: Determine the intervals where the given function $f(x) = \sin(x) + \sin^3(x)$ is increasing; and find all local and global extrema (both coordinates) in the interval $[-\pi, \pi]$. Give 4 decimal places for approximations. Hint: Drawing f is helpful.

Score: /3

Problem 3: A tank shaped like an upside-down square (4 m × 4 m) pyramid with height 12 m is leaking water at the rate of $0.2\,\mathrm{m}^3/\mathrm{s}$. How fast does the height decrease when the water is 2 m deep? Give 4 decimal places.



Score: /4