

Math 108-01
Summer 2024
Dr. Lily Yen

Quiz 5

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Score: ____/10

Problem 1: Use the limit definition of continuity to find a value c that makes the piece-wise defined function continuous everywhere. Draw your resulting function to check. From the graph, is the function differentiable at $x = 2$?

$$f(x) = \begin{cases} \sqrt{x-2}, & x > 2 \\ x^2 - c, & x \leq 2 \end{cases}$$

Score: /4

Problem 2: Answer the following using derivative rules. Do NOT simplify.

a. Find $g'(x)$ where $g(x) = (5x^2 - 3\sqrt{x} + \pi) \left(3x^4 + \frac{1}{x^2} - 100 \right)$

Score: /3

b. Find $d(f(x))/dx$ where

$$f(x) = \frac{2 - \frac{3}{x^4}}{523 + \sqrt{x} - x^6}$$

Score: /3