Math 108-03
Spring 2026
Dr. Lily Yen

Quiz Two

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Number: _____
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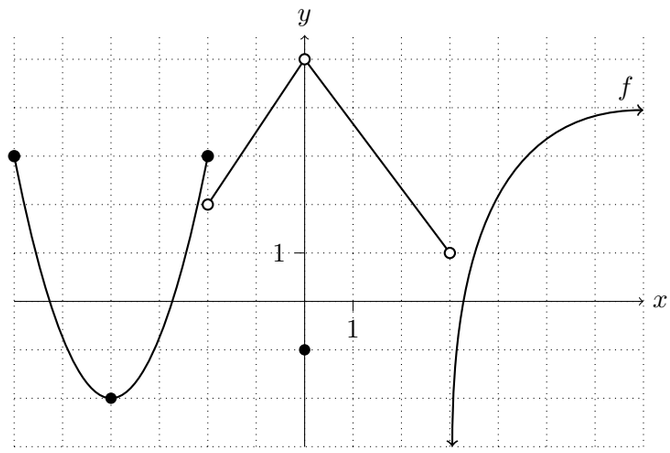
Score: ___/10

Problem 1: The graph of $y = f(x)$ is shown. Use the graph to answer the questions. Use the symbols ∞, $-\infty$, and DNE where appropriate.



a. $f(0) =$ -1

b. $\lim_{x \to -2^+} f(x) =$ 2

c. $\lim_{x \to -2^-} f(x) =$ 3

d. $\lim_{x \to -2} f(x) =$ DNE

e. $\lim_{h \to 0} \dfrac{f(-4+h) - f(-4)}{h} =$ 0

f. $\lim_{x \to 3^+} f(x) =$ $-\infty$

Score: /6

Problem 2: Use a permissible graphing calculator (TI83, TI83+, TI84-Plus) to set up a table of intervals with their corresponding secant line slopes to estimate the instantaneous rate of change of y with respect to x for the function $f(x) = \sqrt{3-x} + \dfrac{8}{x^2}$ at $x = 2$. Round your answers to 6 decimal places. Specify your Y_1 and Y_2 as part of your steps.

Interval	$Y_2 = (Y_1(X) - 3)/(X - 2)$
1.800 00 to 2.000 00	−2.822 90
1.900 00 to 2.000 00	−2.648 75
1.999 00 to 2.000 00	−2.501 38
2.100 00 to 2.000 00	−2.372 58
2.010 00 to 2.000 00	−2.486 36
2.001 00 to 2.000 00	−2.498 63

$f'(2) \approx -2.5$.

Score: /4