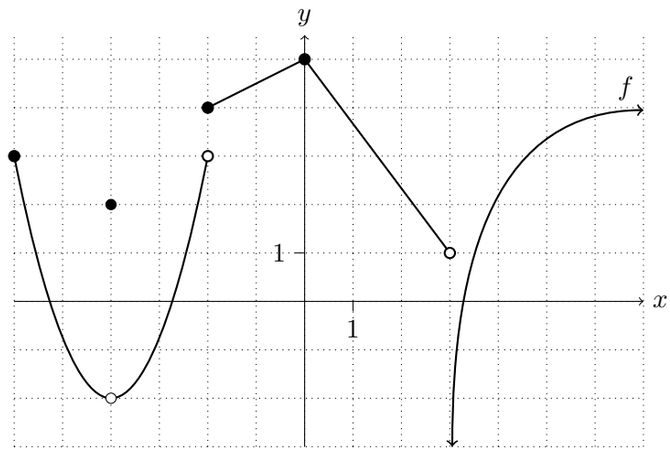
Math 108-03
Spring 2026
Dr. Lily Yen

Quiz 2

Show all your work

Name: _____
Number: _____
Signature: _____
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. $f(-4) =$ 2

b. $\lim_{x \to -2^+} f(x) =$ 4

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

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

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

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 $f(x) = \sqrt{4 - x} + \dfrac{9}{x^2}$ at $x = 3$. Round your answers to 6 decimal places. Specify your Y_1 and Y_2 as part of your steps.

Interval	$Y_2 = (Y_1(X) - 2)/(X - 3)$
2.800 00 to 3.000 00	−1.217 02
2.900 00 to 3.000 00	−1.189 63
2.999 00 to 3.000 00	−1.166 88
3.100 00 to 3.000 00	−1.147 92
3.010 00 to 3.000 00	−1.164 60
3.001 00 to 3.000 00	−1.166 46
3.000 00 to 3.000 00	−1.166 67

According to the graphing calculator, we get $f'(3) \approx -1.166\,667$.

Score: /4