Math 108-01
Summer 2024
Dr. Lily Yen
Lisa Lajeunesse

Quiz 3

Show all your work

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

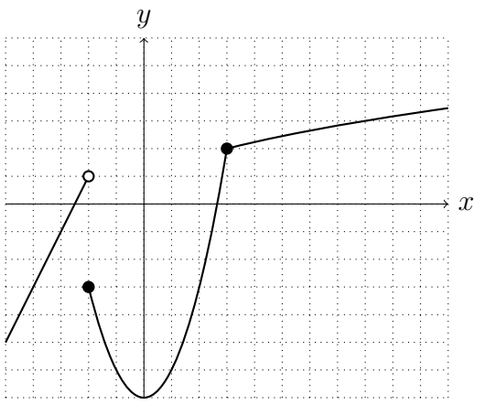
Problem 1: Suppose that the height above street level of a water balloon t seconds after it was thrown off Fir building's office is given by $s(t) = -4.9t^2 + 2t + 13$ metres. Use a permissible graphing calculator (TI83, TI83+, TI84-Plus) to make a table of values for the average velocity of the water balloon to estimate the instantaneous velocity of the water balloon **three** seconds after it was thrown. Clearly state your Y_1 and Y_2 from your graphing calculator. Provide at least 4 decimal places.

Interval	Y_2
2.0000 s–3.0000 s	−22.5000 m/s
2.5000 s–3.0000 s	−24.9500 m/s
2.9000 s–3.0000 s	−26.9100 m/s
2.9900 s–3.0000 s	−27.3510 m/s
3.0000 s–3.0100 s	−27.4490 m/s
3.0000 s–3.0010 s	−27.4049 m/s
Limit	−27.4000 m/s

$Y_1 = -4.9 * t^2 + 2 * t + 13,$
$Y_2 = (Y_1(x) - Y_1(3))/(x - 3)$

Score: /4

Problem 2: Answer the following questions according to the graph of $y = f(x)$ as shown. Note one hollow dot at $(-2, 1)$ and one solid dot at $(-2, -3)$.



a. $f(-2) =$ -3

b. $\lim_{x \to -2^-} f(x) =$ 1

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

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

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

f. $\lim_{x \to 0} \dfrac{f(x) + 7}{x} =$ 0

Score: /6