Math 131 - Quiz 10

Name _____

April 10, 2023

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (4 points) Find open intervals on which the graph of $y = 2x^3 + 3x^2 + 1$ is concave up/down. Identify all points of inflection.

2. (3 points) Use the 2nd derivative to determine whether the graph of $y = x^3 + \sin(10x)$ is concave up or concave down at the point where $x = 0.65$.

3. (3 points) Determine each limit.

   (a) $\lim_{x \to -\infty} \dfrac{8 + 2x - 9x^2}{1 + 3x^2}$

   (b) $\lim_{x \to \infty} \dfrac{\sqrt{x^3}}{x^2 - x - 1}$