Quiz #9, 10/31
Math 156 (Calculus I), Fall 2023

Problem 1 is worth 10 points, for a total of 10 points. Remember to *show your work* on all problems!

1. Consider the function $f\colon \mathbb{R} \to \mathbb{R}$ given by $f(x) = e^{x^2}$.

   (a) Using the first derivative $f'(x)$, list the intervals where f is increasing and the intervals where f is decreasing.

   (b) Does f have any local minima or local maxima? Explain.

   (c) Using the second derivative $f''(x)$, list the intervals where f is concave up and the intervals where f is concave down.

   (d) Does f have any inflection points? Explain.