

## Study guide for quiz 05

Quiz problems include both the lecture contents and homework problems.

1. Chapter 3: **Red text in study guide for quiz 04.**
2. Chap 3: Review how to compute  $f'(0)$  and  $\lim_{x \rightarrow 0} f'(x)$  correctly for functions like

$$f(x) = \begin{cases} x^2 \sin(\frac{1}{x}), & x \neq 0, \\ 0, & x = 0. \end{cases}$$

3. Section 4.1: Classify possible locations of local or global minimum or maximum for a continuous function on a closed interval.
4. Section 4.2: Study the statements, proofs and applications of Rolle's Theorem and Mean Value Theorem. Be careful about the difference between Intermediate Value Theorem and Mean Value Theorem.
5. Section 4.3: Study how to determine whether a critical point is a local minimum, local maximum, or neither using the first derivative test.