Study guide for Midterm 01

Review the study guides for quiz 01 - quiz 04. They are all relevant for midterm 01. What did not appear in the quizzes may very well appear in midterm 01.

1. Section 3.8: Study <u>how to derive</u> the formula for derivative of inverse functions. Memorize the result. Practice the trick of writing $x = e^{\ln x}$ in various applications.

2. Section 3.9: Memorize the domains and ranges of all six inverse trigonometric functions. Study how to derive the derivatives of inverse trigonometric functions and memorize the results. Pay attention to the $|x|$ factor in the derivatives of $\sec^{-1}$ and $\csc^{-1}$.

3. Chapter 3: Practice on derivative of composite functions: $\frac{d}{dx} f_1(f_2(\cdots f_n(x)))$ where the functions $f_1, f_2, \cdots f_n$ are elementary functions such as polynomials, trigonometric functions, exponential functions or their combinations (and now add in logarithmic functions and inverse trigonometric functions in the list).