.

Math 121 - Calculus I

Topics Covered

Midterm 1

- Graphs of familiar functions. Stretching and shifting familiar graphs. Composition of functions.
- Natural exponential function e^x: graph, properties, working with rules of exponents, relationship to $\ln x$.
- Natural logarithm function $\ln x$: graph, properties, working with rules of logarithms, relationship to e^x.
- Inverse functions: one-to-one functions, concept of inverse, graphing, solving algebraically for inverse function.
- Introduction to derivatives: tangent line as limit of secant lines, instantaneous velocity as limit of average velocities, instantaneous velocity as slope of tangent line of position graph.
- Limits: intuitive notion, notation, infinite limits (vertical asymptotes), calculating limits, continuity, limits at infinity (horizontal asymptotes).