

Main Topics

- Limits (including piecewise functions and L'Hôpital's Rule)
- Continuity
- Derivatives
- Limit definition of derivatives
- Implicit differentiation
- Related Rates
- Local linear approximation
- Absolute extrema
- Where is a function: increasing/decreasing, concave up/down
- Relative extrema
- Inflection points
- Rolle's Theorem and the Mean Value Theorem (be able to check the hypotheses)
- Integrals (definite and indefinite, those involving absolute value, using u-substitution)
- Optimization problems
- Relation between position $s(t)$, velocity $v(t)$, and acceleration $a(t)$
- Initial value problems