Calculus 2 Learning Objectives[1]

1. State and apply the Fundamental Theorem of Calculus.

2. Calculate geometric and physical quantities (such as area, volume, work, average value, arc length, surface area, etc.) by evaluating a definite integral determined from the appropriate Riemann sum.

3. Apply integration techniques (including substitution and integration by parts) to evaluate integrals.

4. Determine the convergence behavior of infinite sequences and series and justify the conclusion using tests such as the integral test, comparison/limit comparison test, alternating series test, ratio/root test, etc.

5. Determine the interval of convergence of a power series.

6. Determine the Taylor series representation for a function as well as where it converges.

7. Use Taylor polynomials and Taylor series to solve problems from various fields such as physics, economics, biology, etc.

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[1]This list was approved by the department on 01/07/2019