

MTH 202 Learning Targets

LT 1. I can do three key things from first semester calculus: (a) sketch the derivative function, given a function's graph; (b) apply the chain rule to find the derivative of a composite function; and (c) apply the First Fundamental Theorem of Calculus to evaluate a definite integral.

LT 2*. Given the graph of a function and other data, I can construct an accurate graph of the antiderivative of a function.

LT 3. I can apply the Second Fundamental Theorem of Calculus to find the antiderivative of a function in terms of an integral and also use the 2nd FTC to differentiate an integral function.

LT 4. I can use integration by substitution and integration by parts to evaluate integrals.

LT 5*. I can apply an appropriate technique to approximate a definite integral.

LT 6*. I can use definite integrals to find the area between two curves and the volume of a solid of revolution.

LT 7. I can use definite integrals to find the mass and center of mass of an object.

LT 8*. I can use definite integrals to represent key quantities in applications such as the work done by a varying force or the pressure that water exerts against a dam.

LT 9. I can check whether a function is a solution to a differential equation and explain why the function is or is not a solution.

LT 10*. I can apply Euler's Method to generate an approximate solution to an initial value problem and explain the result's meaning in context.

LT 11. I can express real world situations as differential equations, determine any stable or unstable equilibrium solutions, and explain the significance of the equilibrium solutions in context.

LT 12. Given appropriate information about a function, I can find its Taylor polynomials at a given center a .

LT 13. I can determine whether or not an infinite series is geometric and, if so (and it converges), find its sum.

LT 14. I can use the Taylor series of one or more familiar functions to find the Taylor series for a related function.