

<ul style="list-style-type: none"> Knowledge and Skills 	Resources/Technology	Routines /Vocabulary
<p>Extrema on an Interval</p> <ul style="list-style-type: none"> Understand the definition of extrema of a function on an interval Understand the definition of relative extrema of a function on an open interval Understand and explain the guidelines for finding extrema on a closed interval Find extrema on a closed interval <p>Rolle's Theorem and the Mean Value Theorem</p> <ul style="list-style-type: none"> Understand and use Rolle's theorem Understand and use the Mean Value Theorem 	<p>Houghton Mifflin <i>Calculus</i> pp. 160-173 Sections 3.1-3.2</p> <p>Technology Houghton Mifflin <i>Calculus</i> Teacher Selected Resources: Textbook CD Textbook Videos</p> <p>Publisher's Website: college.hmco.com/mathematics/larson/calculus</p> <p>http://www.sosmath.com/calculus/calculus.html Textbook-like instructions on specific calculus problems</p> <p>http://www.math.temple.edu/~cow Explanations and practice problems</p> <p>http://people.hofstra.edu/faculty/Stefan_Waner/RealWorld/ Practice problems for a variety of topics</p> <p>http://www.math.hmc.edu/calculus/tutorials/ Definitions, examples and quizzes on a variety of topics. Good explanations from Harvey Mudd College</p> <p>http://www.calculus.net/ Links to Calculus problems</p> <p>http://www.exambot.com/math.html Good problems to solve, and then detailed solutions. Good practice exams</p> <p>http://www.ima.umn.edu/~arnold/graphics.html Explanations using graphics</p> <p>http://www.hippocampus.org/Calculus</p>	<p>Routines</p> <ul style="list-style-type: none"> Skills Check Teacher-selected mental mathematics routines Graphing calculators <p>Vocabulary minimum of a function on an interval, maximum of a value on an interval, extreme values, extrema, absolute minimum, absolute maximum, relative minimum, critical number, Rolle's Theorem, Mean Value Theorem</p>

Knowledge and Skills	Resources/Technology	Routines/Vocabulary
<p>Increasing and Decreasing Functions and the First Derivative Test</p> <ul style="list-style-type: none"> Understand and explain the guidelines for finding intervals on which a function is increasing or decreasing Determine intervals on which a function is increasing or decreasing Determine the relative extrema of a function by utilizing the first derivative test <p>Concavity</p> <ul style="list-style-type: none"> Determine intervals on which a function is concave upward or concave downward Calculate the points of inflection of a function Find the points of inflection of the graph of a function <p>Optimization</p> <ul style="list-style-type: none"> Calculate maximum area, minimum area, least size, minimum length, optimum size <p>Differentials</p> <ul style="list-style-type: none"> Calculate the differential of a function using differentiation formulas 	<p>Houghton Mifflin <i>Calculus</i> pp. 174-187; 213-221; 231-234 Sections 3.3 – 3.4; 3.7 & 3.9</p> <p>Publisher's Website: college.hmco.com/mathematics/larson/calculus</p> <p>http://www.sosmath.com/calculus/calculus.html Textbook-like instructions on specific calculus problems</p> <p>http://www.math.temple.edu/~cow Explanations and practice problems</p> <p>http://people.hofstra.edu/faculty/Stefan_Waner/RealWorld/ Practice problems for a variety of topics</p> <p>http://www.math.hmc.edu/calculus/tutorials/ Definitions, examples and quizzes on a variety of topics. Good explanations from Harvey Mudd College</p> <p>http://www.calculus.net/ Links to Calculus problems</p> <p>http://www.exambot.com/math.html Good problems to solve, then detailed solutions. Good practice exams</p> <p>http://www.ima.umn.edu/~arnold/graphics.html Explanations using graphics</p> <p>http://www.hippocampus.org/Calculus</p>	<p>Routines</p> <ul style="list-style-type: none"> Skills Check Teacher-selected mental mathematics routines Graphing calculators <p>Vocabulary increasing function, decreasing function, relative minimum, relative maximum, concave upward, concave downward, differential form</p>

Knowledge and Skills	Resources	Routines/Vocabulary
<p>Antiderivatives and Indefinite Integration</p> <ul style="list-style-type: none"> • Write the general solution of a differential equation • Solve integrals using basic integration rules • Find a particular solution of a differential equation <p>Area</p> <ul style="list-style-type: none"> • Use sigma notation to write and evaluate a sum • Approximate the area of a plane region using upper and lower sums 	<p>Houghton Mifflin <i>Calculus</i> pp. 242-264 Sections 4.1 & 4.2</p> <p>Publisher's Website: college.hmco.com/mathematics/larson/calculus</p> <p>http://www.sosmath.com/calculus/calculus.html Textbook-like instructions on specific calculus problems</p> <p>http://www.math.temple.edu/~cow Explanations and practice problems</p> <p>http://people.hofstra.edu/faculty/Stefan_Waner/RealWorld/ Practice problems for a variety of topics</p> <p>http://www.math.hmc.edu/calculus/tutorials/ Definitions, examples and quizzes on a variety of topics. Good explanations from Harvey Mudd College</p> <p>http://www.calculus.net/ Links to Calculus problems</p> <p>http://www.exambot.com/math.html Good problems to solve, then detailed solutions. Good practice exams</p> <p>http://www.ima.umn.edu/~arnold/graphics.html Explanations using graphics</p> <p>http://www.hippocampus.org/Calculus</p>	<p>Routines</p> <ul style="list-style-type: none"> • Skills Check • Teacher-selected mental mathematics routines • Graphing calculators <p>Vocabulary antiderivative, constant of integration, general antiderivative, general solution, differential equation, antidifferentiation, indefinite integral, particular solution, initial condition, sigma notation, inscribed rectangle, circumscribed rectangle, lower sum, upper sum</p>