Knewton Alta

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- Estimating Function Values with Taylor and Maclaurin Series
  - Find the Maclaurin polynomials for a function (40)
  - Determine the error of a estimated function value using Taylor's theorem (5)
  - Estimate a function value using Taylor polynomials (40)
  - Estimate a trigonometric function value using Maclaurin polynomials (5)
- Representing Functions with Taylor and Maclaurin Series
  - Represent a function at a value with a Taylor series and determine the interval of convergence
  - Find the Maclaurin series for a function and show that the series converges
10.4 Working with Taylor Series
- Binomial Series
  - Find the binomial series for function (5)
  - Estimate a function value using a binomial series (5)

- Finding the Maclaurin Series that Represents a Function
    - Find the Maclaurin series for a trigonometric function (5)
    - Find the Maclaurin series for a logarithmic or exponential function (5)
    - Find a Maclaurin series by differentiating another series (5)
- Applications of the Taylor and Maclaurin Series
    - Evaluate a nonelementary definite integral using a Taylor series (5)
    - Approximate a probability using a Maclaurin series (5)
    - Approximate the period of a pendulum using a binomial series

Chapter 11: Parametric Equations and Polar Coordinates
11.1 Parametric Equations
- Write Parametric Equations
    - Parameterize a curve (5)
    - Find the parametric equations for a line segment given an orientation (5)
- Eliminate the Parameter
    - Eliminate the parameter in linear equations (5)
    - Eliminate the parameter in polynomial and radical equations (8)
    - Eliminate the parameter in exponential and logarithmic equations (8)
    - Eliminate the parameter in trigonometric parametric equations (5)
- Graph Parametric Equations
    - Graph parametric equations by plotting points (5)
    - Graph trigonometric parametric equations by plotting points (5)
    - Use parametric equations in applications
- Cycloids
    - Graph a cycloid defined by parametric equations (5)
    - Determine the number of cusps on a hypocycloid (5)

11.2 Calculus of Parametric Curves
- Derivatives of Parametric Equations
    - Find the derivative of a curve defined by polynomial parametric equations
    - Find the derivative of a curve defined by trigonometric parametric equations
    - Find the equation of a line tangent to a parametrically defined curve
    - Find the second derivative of curve defined by parametric equations (5)
- Integrating Parametric Curves
    - Find the area under a curve defined by parametric equations (5)
    - Find the arc length of a curve defined by trigonometric parametric equations (5)
    - Find the surface area of a volume of revolution generated by revolving a parametrically defined curve
11.3 Polar Coordinates
- Defining Polar Coordinates
    - Locate points in a plane by using polar coordinates
    - Convert coordinates from polar form to rectangular form
    - Convert coordinates from rectangular form to polar form
- Converting Equations Between Rectangular and Polar Forms

- - Convert a cartesian equation to polar form
    - Convert a polar equation to cartesian form
  - Graphs Using Polar Coordinates
    - Identify symmetry in polar equations and curves
    - Graph polar equations by plotting points and find zeros and maximum values for a polar equation

11.4 Calculus in Polar Coordinates
- Area and Arc Length in Polar Coordinates
  - Find the area of a region between two polar curves
  - Find the arc length of a polar curve
  - Find the area of a region bounded by a polar curve