

MA216 Midterm exam Thursday, October 3, 2019; 09.00-11.00 hrs.
40% (7 problems)

Chapter 1: Limits and Continuity

- Computing Limits: Conjugate/Using Factorization
- Limits involving Infinity
- Limits of Trigonometric Functions
- Squeeze Theorem
- Continuity, Intermediate Value Theorem

Chapter 2: Differentiation

- The Derivative definition (using limits)
- Derivative formulas:
 - Power functions
 - Trigonometric functions: sin/cos/tan/sec/csc/cot (No inverse, no hyperbolic functions)
 - Logarithmic and Exponential Functions
- Product/Quotient Chain Rules
- Implicit Differentiation
- Logarithmic Differentiation
- Higher Derivatives
- Linear Approximations and Differentials

Chapter 3: Applications of Differentiation

- L'Hospital's Rule; Indeterminate Forms for finding limits
- Related rates:

You have to know the following formulas (as we did in class).

 - Volume formulas: sphere/cone/cylinder
 - Pythagoras theorem
 - Similar triangles

Other formula will be provided if needed.