Math 251  Exam 1 Review Sheet

• Exam 1 is an in-class exam given Thursday, October 23, 2008.
• Exam 1 will cover Chapter 1 and §§2.1 – §2.5
• The topics covered on the exam will include the following:
  • Functions:
    – domain and range
    – combinations of functions (i.e., \((f + g)(x),(f - g)(x),(f \cdot g)(x), \left(\frac{f}{g}\right)(x)\))
    – composition of functions (i.e., \((f \circ g)(x)\))
    – piecewise functions
  • Solving equations involving exponential and logarithmic functions (remember the exponent and logarithm laws)
  • Inverse functions
  • Finding the equation of a line through given points
  • Limits
    – estimating the slope of tangent lines (as a limit of the slope of secant lines)
    – estimating the instantaneous velocity (as a limit of average velocities)
    – using tables, graphs and algebra to find limits
    – left hand and right hand limits
    – sketching graphs with various limit conditions given
    – limits at infinity
  • The Squeeze Theorem
  • Continuity
    – determining continuity at a given point
    – continuity from the left and right
    – sketching graphs with various continuity conditions given
  • The Intermediate Value Theorem
  • Determining vertical and horizontal asymptotes using limits

Suggested Review Problems

• Chapter 1 Review
  – True-False Quiz on page 83 Problems 1 – 11
  – Exercises on pages 84 – 85 Problems: 1(a) – (f), 2, 5 – 8, 9, 10, 19, 20, 23 – 28
• Chapter 2 Review
  – Concept Check on page 175 Problems 4 – 8
  – Exercises on pages 176 – 178 Problems 1 – 16, 19 – 21, 23, 24, 25 (Hint: use the Squeeze Theorem on 20)