Calculus w/Business Applications
Final Exam Topic Outline

1. Simplify algebraic expressions: rationalize numerators, factor rational exponents, etc.
2. Determine the slope of a line and/or equation of a line [given a point & a slope, two points], answer in slope-intercept form
3. Determine the equation of horizontal & vertical lines
4. Determine a supply or demand curve from given information
5. Determine equilibrium price & quantity, break-even quantity and point
6. Determine cost or revenue function from given information
7. Find Profit function from given information
8. Determine the domain and range of a function
9. Sketch a quadratic function using shifts and translation
10. Identify the vertex, axis of symmetry, and/or maximum/minimum of a given quadratic function

11. Find/simplify difference quotient for a given function
12. Evaluate the limit of a function including from the left, right, and approaching $\pm\infty$ and absolute values
13. Determine the continuity of a function at a given point
14. Determine slope of the secant line/average rate of change and/or the slope of the tangent line/instantaneous rate of change of a given function
15. Find the equation of the tangent line at a given point to a given function (includes horizontal tangent lines)
16. Determine the derivative of a functions using the limit definition
17. Evaluate the derivative at a given point
18. Determine whether a function is differentiable at a given value of x
19. Find the derivative of a function using basic sum, difference, power, product, quotient, logarithm & exponential rules and chain rules
20. Find where horizontal tangent lines occur for a given function

21. Determine where a function is increasing/decreasing
22. Find critical numbers and points for a function
23. Use First & Second Derivative Tests to determine extrema of a given function & sketch the graph of the function (these include polynomial & rational functions)
24. Find Absolute Extreme values (both closed and open intervals)
25. Find requested Marginal values for a given function
26. Determine the location of any inflection points
27. Determine where a function is concave up/down
28. Find the point of diminishing returns for a function
29. Find requested Differentials for a given function
30. Find first &/or second derivative of implicit functions
31. Solve applications using the derivative properties (includes Marginal Cost, Marginal Revenue, Marginal Profit, related rates) – applications of any of the above functions & concepts
32. Find the Elasticity of demand for a given situation
33. Use Implicit Differentiation to find the derivative of a given function
34. Solve applications of the above type problems

Calculus w/Business Applications
Final Exam Topic Outline

35. Find the most general integral/antiderivative for a given function using basic rules, substitution, and/or By-Parts
36. Find the specific integra/antiderivative for a given function with given initial condition using basic rules, substitution, and/or By-Parts
37. Find the area under a curve
38. Solve applications of the above type problems
39. Solve consumer application, growth/decay problems
40. Solve given differential equations, general solutions and particular

Chapter Reviews & Tests

Ch. R	Review, p. 85	1 – 14, 16 – 49;	Test, p. 88	1 – 21
Ch. 1	Review, p. 190	1 – 50, 52 – 53;	Test, p. 192	1 – 38
Ch. 2	Review, p. 301	1 – 45, 48, 50;	Test, p. 303	1 – 25, 32
Ch. 3	Review, p. 382	16 – 42, 47 – 48;	Test, p. 384	1 – 15, 19 – 20
Ch. 4	Review, p. 466	5 – 61;	Test, p. 468	1 – 17, 20 – 32
Ch. 5	Review, p. 541	13 – 20, 42 – 49;	Test, p. 543	1 – 5, 8 – 10, 28 – 35

And Study your Take-home and On-Line/In-Class Quizzes