Part II: Derivatives (You are not responsible for pages marked with an x.)

2 Functions of Several Variables (included in Exam 2)
- a Formulas 1 2
- b Graphs 1 2
- c Level Sets and Contour Plots 1 2 3
- d Maxima, Minima, and Saddle Points 1 2 3

10 Limits and Continuity (only for Honors students)
- a Intuitive Definition of a Limit 1x 2x 3x
- b Limits with Polar Coordinates 1x
- c More Variables, Limit Laws and Continuity 1x 2x

11 Partial Derivatives and Tangent Planes
- a Computation of Partial Derivatives 1
- b Algebraic Definition of Partial Derivatives 1
- c Geometric Interpretation of Partial Derivatives 1 2
- d Tangent Plane to the Graph of a Function 1
- e More Variables 1(top half)

12 Linear Approximation
- a Differentials and Linear Approximation - 1 Variable 1x 2x
- b Differentials and Linear Approximation - 2 Variables 1 2
- c Differentials and Linear Approximation - 3 Variables 1 2

13 Chain Rule
- a Composition of Functions 1
- b Chain Rule 1 2 3 4
- c Nested Chain Rule 1
- d Implicit Partial Differentiation 1 2

14 Directional Derivatives and Gradients
- a Derivative along a Curve and the Gradient 1
- b Derivative along a Vector 1
- c Directional Derivatives 1 2
- d Properties of the Gradient 1 2 3
- e Tangent and Normal, Lines and Planes to Level Sets 1x 2 3x

15 Higher Order Derivatives
- a Higher Derivatives 1
- b Clairaut's Theorem 1
- c The Hessian 1x
- d Taylor Series and Polynomials 1x 2x

16 Max-Min Problems
- a Local Minima, Local Maxima and Saddle Points 1x 2 3 4x
- b Constrained Max-Min Problems: Eliminate a Variable Method 1
- c Constrained Max-Min Problems: Lagrange Multiplier Method 1
- d Constrained Max-Min Problems: Parametrization Method 1x
- e Multiple Constraint 1x

17 Scalar and Vector Fields
- a Scalars vs. Vectors 1
- b Scalar Fields vs. Vector Fields 1
- c Plots of Vector Fields 1

18 Divergence and Curl
- a The Del Operator 1
- b The Divergence Operator 1 2
- c The Curl Operator 1 2
- d Differential Identities 1x 2x

19 Scalar and Vector Potentials
- a Generalizing Antiderivatives 1
- b Scalar Potentials 1 2
- c Vector Potentials 1x 2x