

Mathematics

Chapter 1: function

1. function
2. elementary function
3. limit of number sequence
4. limit of function.
5. infinitely great and infinitely small
6. operation rule of limit
7. the two major limit
8. compare of infinitesimal
9. continuity and discontinuous point of function
10. closed interval continuous function

chapter 2:derivative and differential

1. concept of derivative.
2. method of derivation about the sum \difference\product\quotient of function
3. derivation of inverse function, derivative of functions' function.
4. the derivate of element function
5. derivation of higher order.
6. derivative of implicit function

7. differential of function

chapter 3:mean value theorem and the use of derivation

1. mean value theorem.
2. Talor's formula.
3. function monotone desion
4. extreme of function.
5. minimal value and maximum
6. concave and convex of function.

Chapter 4:indefinite integral

1. concept and property of indefinite integral
2. integration by substitution
3. integration by parts.
4. integration by some special function
5. the use of integration table

chapter 5:definite integral

1. concept of definite integral
2. property of definite integral
3. the basic formula of differential
4. substitution of definite integral
5. definite integral by parts

6. improper integral

chapter 6:the use of definite integral

1. the area of the plane figure
2. volume
3. length of plane curve
4. water pressure
5. mean value

chapter 7:vector algebra and analytic geometry of space

1. rectangular coordinates of space
2. vector algebra
3. plane and equation of the plane
4. equation of line in the space
5. ordinary curved surface
6. space curve and its projection curve in the surface of coordination

chapter 8:the calculus about function of many variables

1. concept function of many variables
2. partial derivative
3. total differential
4. the calculus about compound function
5. use in geometry of calculus about the function of many variables

6. extreme about the function of many variables

chapter 9:superposition integral

1. superposition integral of two variables
2. superposition integral of three variables
3. computational method of superposition integral
4. the use of superposition integral

chapter 10:infinite series

1. concept and property of infinite series
2. positive term series
3. arbitrary term series
4. power series.
5. power series development of function

chapter 11:differential equation

1. the basic concept of differential equation
2. differential equation of the first order
3. differential equation of reduced order
4. differential equation of second order.

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