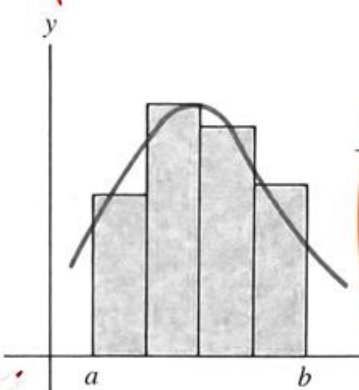
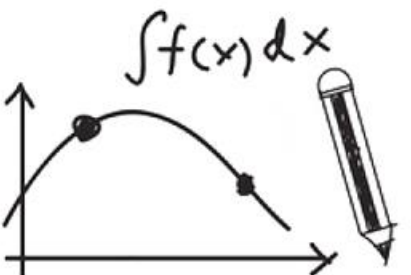




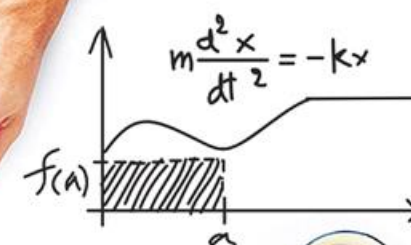
$$x^2 - 3x - 4 = 0$$
$$4x^2 - 3x - 1 = 0$$



# Calculus(I)

$$\frac{d}{dx} \left[ \frac{f(x)}{g(x)} \right] = \frac{g(x)f'(x) - f(x)g'(x)}{g(x)^2}$$

$$F = mg = ma = m \frac{d^2h}{dt^2}$$



Gottfried Wilhelm Leibniz

$$\frac{dA}{dt} = \frac{dB}{dt} = -\frac{dC}{dt} = \frac{dD}{dt} = (c_1)T^{\frac{1}{2}}AB - (c_2)T^{\frac{1}{2}}CD$$

$$m \frac{d^2x}{dt^2} = -kx - f \frac{dx}{dt} + A \sin(\omega t)$$
$$y' = \text{and } v' = -ky - fv + A \sin(\omega t)$$

$$m \frac{d^2x}{dt^2} = -kx$$

$$x = A \cos(\omega t + \phi)$$
$$\frac{dA}{dt} = (c_1)(T - T)$$

$$\frac{df(x)}{dx}$$

$$\frac{b^2 - 4ac}{4a^2}$$

$$x + \frac{b}{2a} = \frac{\sqrt{b^2 - 4ac}}{2a}$$

$$x + \frac{b}{2a} = -\frac{\sqrt{b^2 - 4ac}}{2a}$$

$$x + h, f(x + \Delta x)$$

## **Course Feature**

An important general basic compulsory course for undergraduates majoring in science and engineering

# Important & difficult points

Understand mathematical concepts

Understand theorems and properties

Master calculation methods

Deal with practical problems

# **With calculus knowledge, you can...**

Obtain the basic concepts, basic theory and basic calculation skills of one variable function calculus.

Lay a theoretical foundation for the study of the next related mathematical courses (statistics, DE, etc.)

Lay a solid mathematical foundation for the study of the follow-up courses of finance, science and engineering.

# What to learn

Indeterminate Forms and Improper Integrals

Techniques of Integration  
Transcendental and Functions  
Applications of the Integral  
The Definite Integral  
Applications of the Derivative

The Derivative



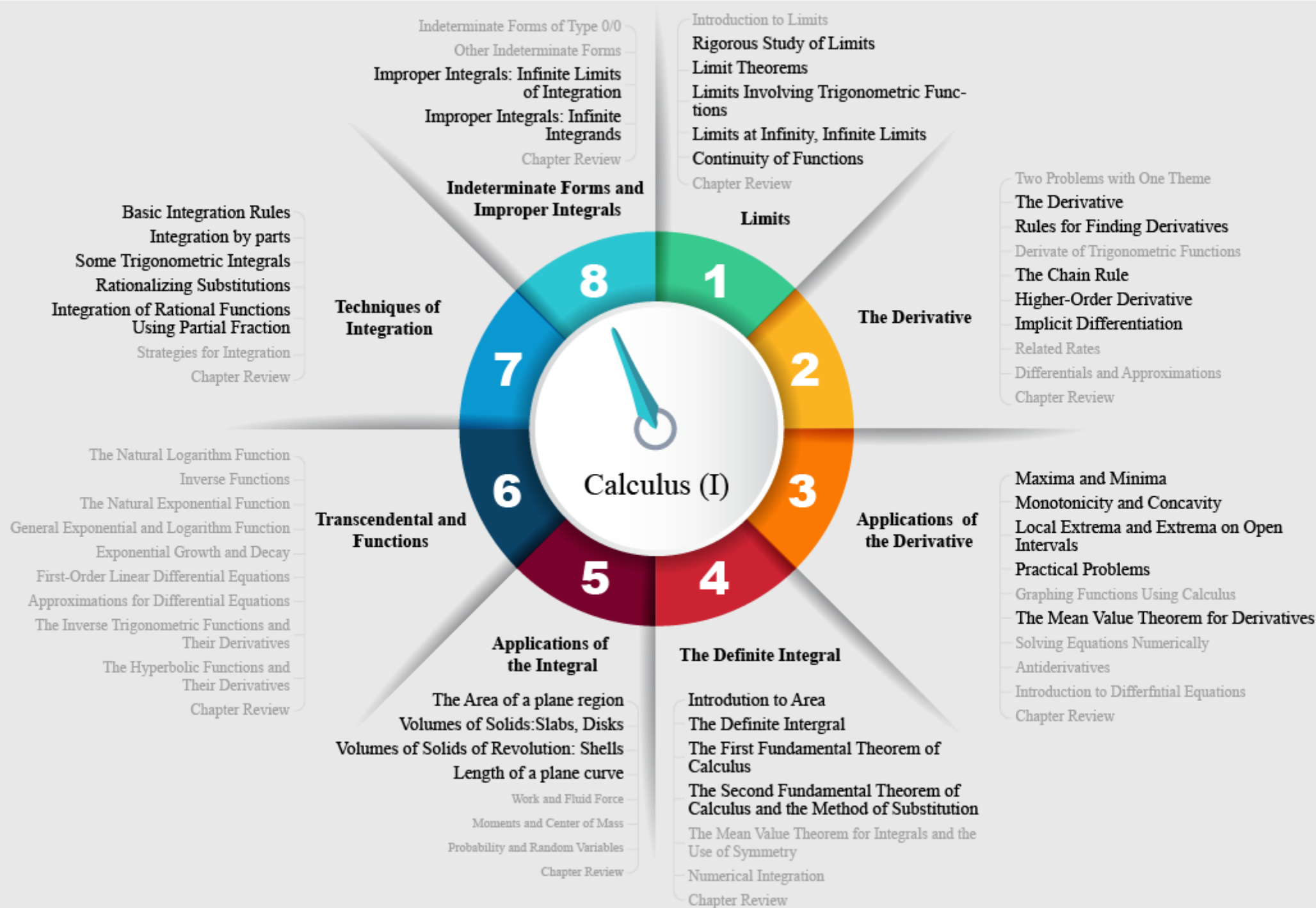
The Derivative

Limits

Limits

Indeterminate  
Forms and





# How to learn

# Learning ability

strictly logical thinking ability

accurate calculation ability

spatial imaginary ability

analyzing and solving problem ability





# Learning method

Preview before class, find out the question

Listen carefully, understand the definitions and examples

Review after class, do your homework by yourself

# ASSESSMENT

