

History of Calculus

Calculus · Practice Test · 12 Questions

1. Which 17th-century mathematician is widely credited with independently developing calculus alongside Isaac Newton?

- A) Gottfried Wilhelm Leibniz
- B) René Descartes
- C) Blaise Pascal
- D) Pierre de Fermat

2. In which book did Isaac Newton first publish his work on the laws of motion and universal gravitation, utilizing early forms of calculus?

- A) Principia Mathematica
- B) The Analyst
- C) Arithmetica Infinitorum
- D) De Moivre's Theorem

3. Which ancient Greek mathematician used the 'method of exhaustion' to calculate areas and volumes, a precursor to integral calculus?

- A) Archimedes
- B) Euclid
- C) Pythagoras
- D) Thales

4. What is the name of the 1734 critique written by Bishop George Berkeley that challenged the logical foundations of Newton's calculus?

- A) The Analyst
- B) The Calculus Controversy
- C) Principia
- D) The Method of Fluxions

5. Isaac Newton referred to the process of differentiation as the method of what?

- A) Fluxions
- B) Infinitesimals
- C) Integration
- D) Tangents

6. Gottfried Wilhelm Leibniz introduced which symbol, still used today, to represent the operation of integration?

- A) ?
- B) ?
- C) ?
- D) ?

7. Which mathematician was the first to use the term 'function' in a mathematical sense, a concept central to calculus?

- A) Gottfried Wilhelm Leibniz
- B) Leonhard Euler
- C) Carl Friedrich Gauss
- D) Bernhard Riemann

8. In the 'calculus priority dispute', which two nations were the primary rivals in claiming the invention of the field?

- A) England and Germany
- B) France and Italy
- C) Spain and Portugal
- D) Russia and Prussia

9. Which French mathematician is credited with formalizing the definition of the derivative using limits in the 19th century?

- A) Augustin-Louis Cauchy
- B) Pierre-Simon Laplace
- C) Joseph-Louis Lagrange
- D) Évariste Galois

10. What concept did Bernhard Riemann introduce to provide a rigorous definition of the definite integral?

- A) Riemann sum
- B) Newtonian series
- C) Leibnizian product
- D) Cauchy sequence

11. Before the term 'calculus' became standard, what term did Newton use to describe his mathematical system?

- A) Method of Fluxions
- B) The Fluxionary Calculus
- C) New Geometry
- D) Infinite Analysis

12. Which mathematical constant, frequently used in calculus for growth and decay problems, was discovered by Jakob Bernoulli?

- A) e
- B) π
- C) ϕ
- D) i