

Foundations of Formal Logic

Logic · Practice Test · 8 Questions

1. Who is credited with creating the first formal system of deductive reasoning, known as the syllogism, in his work 'Prior Analytics'?

- A) Aristotle
- B) Plato
- C) Socrates
- D) Euclid

2. In 1854, which mathematician published 'An Investigation of the Laws of Thought', effectively founding the field of algebraic logic?

- A) Gottlob Frege
- B) George Boole
- C) Augustus De Morgan
- D) Bertrand Russell

3. What is the name of the seminal three-volume work published by Alfred North Whitehead and Bertrand Russell that attempted to derive all mathematical truths from logical axioms?

- A) The Concept of Nature
- B) Principia Mathematica
- C) Tractatus Logico-Philosophicus
- D) The Laws of Thought

4. Which logician proved the incompleteness theorems in 1931, demonstrating that in any consistent formal system, there are statements that cannot be proven or disproven?

- A) Alan Turing
- B) David Hilbert
- C) Kurt Gödel
- D) Alfred Tarski

5. What early computational device, designed by Charles Babbage in the 19th century, was intended to automate logical calculations?

- A) The Difference Engine
- B) The Analytical Engine
- C) The Jacquard Loom
- D) The ENIAC

6. Gottlob Frege's 1879 work 'Begriffsschrift' is historically significant for introducing what new logical notation?

- A) Quantifier notation
- B) Propositional calculus
- C) Boolean algebra
- D) Set theory notation

7. Who formulated the 'Law of the Excluded Middle' as a fundamental principle of classical logic?

- A) Zeno of Elea
- B) Aristotle
- C) Parmenides
- D) Heraclitus

8. Which English logician is known for inventing the graphical method for visualizing syllogisms, known as 'Venn diagrams', in 1880?

- A) John Venn
- B) Lewis Carroll
- C) Charles Sanders Peirce
- D) William Stanley Jevons