The History of Logic

Logic · Answer Key · 15 Questions

1. Who is credited with being the first to systemize logic by developing the theory of the syllogism?

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

2. Which 19th-century mathematician published 'The Laws of Thought', effectively introducing Boolean algebra to the field of logic?

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

3. In which foundational work did Gottlob Frege introduce modern predicate logic and the concept of quantification?

A) Principia Mathematica
B) Tractatus Logico-Philosophicus
C) Begriffsschrift
D) The Analysis of Mind

4. The 'Liar Paradox' is a famous logical puzzle dating back to which ancient Greek philosopher?

A) Zeno of Elea
B) Eubulides of Miletus
C) Heraclitus
D) Pythagoras

5. What is the name of the logical law stating that a proposition cannot be both true and false at the same time and in the same sense?

A) Law of Excluded Middle
B) Law of Identity
C) Principle of Non-Contradiction
D) Principle of Sufficient Reason

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6. Alfred North Whitehead and Bertrand Russell collaborated on which multi-volume work that attempted to derive all of mathematics from logical axioms?

A) Principia Mathematica
B) Grundgesetze der Arithmetik
C) Analytic Theory of Logic
D) The Foundations of Arithmetic

7. Which logician proved the Incompleteness Theorems in 1931, demonstrating limits on provability within formal systems?

A) Alan Turing
B) Alonzo Church
C) Kurt Gödel
D) John von Neumann

8. Who invented the truth table method for evaluating logical expressions in the early 20th century?

A) Emil Post
B) Ludwig Wittgenstein
C) Charles Sanders Peirce
D) Both A and B

9. The concept of 'logical atomism', which posits that the world consists of ultimate, independent facts, is most closely associated with whom?

A) Bertrand Russell
B) David Hume
C) Immanuel Kant
D) Baruch Spinoza

10. What term describes the system of logic introduced by Chrysippus of Soli that focused on propositions rather than terms?

A) Stoic logic
B) Peripatetic logic
C) Scholastic logic
D) Formal logic

11. In 1936, who independently invented the lambda calculus, a formal system for function abstraction and application that serves as a foundation for computer science?

A) Kurt Gödel
B) Alonzo Church
C) Alan Turing
D) Claude Shannon

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12. Which medieval philosopher is credited with developing 'Supposition Theory', a major advancement in the study of reference and semantics?

A) William of Ockham
B) Thomas Aquinas
C) Peter Abelard
D) John Duns Scotus

13. Which mathematician and logician is known for his work on the 'Calculus Ratiocinator', an early attempt to create a universal logical language?

A) René Descartes
B) Gottfried Wilhelm Leibniz
C) Blaise Pascal
D) Isaac Newton

14. What logical principle states that for any proposition, either that proposition is true or its negation is true?

A) Law of Excluded Middle
B) Law of Identity
C) Law of Double Negation
D) Principle of Identity

15. Who formulated the 'Church-Turing Thesis', which identifies the intuitive concept of effective calculability with the formal concept of a Turing machine?

A) Alonzo Church and Alan Turing
B) Kurt Gödel and John von Neumann
C) Bertrand Russell and Alfred Tarski
D) Emil Post and George Boole

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