

# Foundations of Logic

Logic · Answer Key · 10 Questions

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**1. Who is widely considered the 'Father of Logic' for his systematic treatment of syllogistic logic in his work 'Organon'?**

- A) Gottlob Frege
- B) Aristotle**
- C) George Boole
- D) Bertrand Russell

**2. What ancient Greek philosopher developed a formal system of deductive reasoning, often referred to as syllogistic logic?**

- A) Plato
- B) Socrates
- C) Aristotle**
- D) Pythagoras

**3. Which 19th-century mathematician developed 'Boolean algebra', a system of algebra in which variables represent logical propositions?**

- A) John Venn
- B) Gottfried Leibniz
- C) George Boole**
- D) Charles Babbage

**4. The concept of the 'law of non-contradiction', stating that a proposition cannot be both true and false at the same time and in the same respect, is a fundamental principle attributed to which early logician?**

- A) Epicurus
- B) Heraclitus
- C) Aristotle**
- D) Zeno of Elea

**5. Which philosopher and mathematician is known for his work on the 'calculus ratiocinator', an attempt to create a universal logical language and a calculus for reasoning?**

- A) René Descartes
- B) Gottfried Wilhelm Leibniz**
- C) Blaise Pascal
- D) John Locke

**6. What is the name of the logical fallacy that occurs when a conclusion is not logically connected with the premises of an argument?**

- A) Ad hominem
- B) Straw man
- C) Non sequitur**
- D) Slippery slope

**7. Which 19th-century mathematician invented the 'Venn diagram' as a visual representation of logical relationships between sets?**

- A) Augustus De Morgan
- B) John Venn**
- C) Charles Dodgson (Lewis Carroll)
- D) George Boole

**8. The development of propositional logic, dealing with statements and their logical connections, has roots in the work of which ancient Greek school of philosophy?**

- A) Epicureans
- B) Stoics**
- C) Cynics
- D) Academics

**9. In modern logic, the concept of 'quantifiers' (like 'for all' and 'there exists') is central. Who is credited with developing predicate logic and introducing these concepts?**

- A) Alfred North Whitehead
- B) Bertrand Russell
- C) Gottlob Frege**
- D) Giuseppe Peano

**10. The 'Principle of Excluded Middle', which states that for any proposition, either that proposition is true or its negation is true, is a core principle of classical logic, often traced back to the work of?**

- A) Immanuel Kant
- B) Aristotle**
- C) Gottfried Leibniz
- D) David Hume