

# Foundations of Statistics and Probability

Statistics & Probability · Answer Key · 15 Questions

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**1. Which ancient civilization is credited with developing early forms of record-keeping and data collection, considered precursors to statistics?**

- A) Ancient Rome
- B) Ancient Egypt
- C) Ancient Greece
- D) Mesopotamia**

**2. In the 17th century, who is often considered one of the founders of probability theory, corresponding with Blaise Pascal about gambling problems?**

- A) Isaac Newton
- B) Pierre de Fermat**
- C) Galileo Galilei
- D) Johannes Kepler

**3. What was the name of the first major statistical society, founded in London in 1834?**

- A) The Royal Statistical Society**
- B) The American Statistical Association
- C) The International Statistical Institute
- D) The Bernoulli Society

**4. The concept of 'normal distribution' or 'bell curve' is often associated with the work of which German mathematician in the early 19th century?**

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

**5. Who is widely recognized as the father of modern statistics, known for his work on sampling, correlation, and chi-squared tests in the early 20th century?**

- A) Ronald Fisher**
- B) Karl Pearson
- C) William Sealy Gosset
- D) Jerzy Neyman

**6. What significant event in the 18th century spurred the development of actuarial science and thus probability in insurance?**

- A) The French Revolution
- B) The Industrial Revolution
- C) The Great Fire of London**
- D) The discovery of America

**7. The development of the 'law of large numbers' is a foundational concept in probability, with significant contributions from mathematicians like Jacob Bernoulli in the late 17th and early 18th centuries.**

- A) True**
- B) False
- C) Partially True
- D) Only partially applicable

**8. Which famous mathematician, known for his work in calculus and probability, published 'Ars Conjectandi' (The Art of Conjunction) posthumously in 1713?**

- A) Blaise Pascal
- B) Pierre de Fermat
- C) Jacob Bernoulli**
- D) Christiaan Huygens

**9. The first census in the United States was conducted in which year?**

- A) 1776
- B) 1790**
- C) 1800
- D) 1812

**10. In the context of early statistical analysis, what was the primary focus of John Graunt's work on 'Bills of Mortality' in 17th century London?**

- A) Economic trends
- B) Population and mortality rates**
- C) Agricultural yields
- D) Weather patterns

**11. The concept of 'hypothesis testing' as a formal procedure in statistics was significantly advanced by which statistician in the 1930s?**

- A) R.A. Fisher
- B) Jerzy Neyman**
- C) Karl Pearson
- D) Egon Pearson

**12. The development of the 'chi-squared distribution' is strongly linked to the work of which early 20th-century statistician?**

- A) William Sealy Gosset
- B) Ronald Fisher
- C) Karl Pearson**
- D) Francis Galton

**13. What is the name of the famous paradox in probability theory, first described by the Chevalier de Méré in the 17th century, concerning the probabilities of dice rolls?**

- A) The St. Petersburg Paradox
- B) The Birthday Paradox
- C) The Gambler's Ruin Paradox
- D) The Dice Problem (or de Méré's Problem)**

**14. Florence Nightingale's pioneering use of statistical diagrams, particularly her 'rose diagrams', was instrumental in advocating for reforms in which field during the mid-19th century?**

- A) Education
- B) Public health and sanitation**
- C) Child labor laws
- D) Women's suffrage

**15. The 'Galton Board', a device used to demonstrate the normal distribution, was invented by which English polymath in the late 19th century?**

- A) Charles Darwin
- B) Francis Galton**
- C) Herbert Spencer
- D) Alfred Russel Wallace