

The History of Trigonometry

Trigonometry · Answer Key · 18 Questions

1. Which ancient civilization is credited with the earliest development of a rudimentary trigonometric system based on the shadow lengths of a gnomon?

- A) Ancient Egypt
- B) Babylonia**
- C) Ancient Greece
- D) Indus Valley

2. The 'Plimpton 322' clay tablet, which contains a sophisticated list of Pythagorean triples, originates from which era?

- A) Old Babylonian period**
- B) Neo-Assyrian period
- C) Achaemenid Empire
- D) Hellenistic period

3. Who is historically regarded as the 'father of trigonometry' for his compilation of the first known trigonometric table, the 'Table of Chords'?

- A) Euclid
- B) Archimedes
- C) Hipparchus**
- D) Ptolemy

4. In his treatise 'Almagest', which mathematician utilized the chord function based on a circle of radius 60 to calculate astronomical positions?

- A) Claudius Ptolemy**
- B) Diophantus
- C) Theon of Alexandria
- D) Heron

5. The transition from the chord-based system to the sine-based system is primarily attributed to which Indian mathematician's work, 'Aryabhatiya'?

- A) Brahmagupta
- B) Bhaskara I
- C) Aryabhata**
- D) Varahamihira

6. The Sanskrit term 'jya' (chord) was mistranslated into Arabic as 'jiba', which eventually evolved into the modern term 'sine' through which language?

- A) Latin**
- B) Greek
- C) Persian
- D) Hebrew

7. Which 10th-century mathematician was the first to define the six trigonometric functions as ratios of sides of right-angled triangles rather than as chords in circles?

- A) Al-Khwarizmi
- B) Al-Battani
- C) Abu al-Wafa al-Buzjani**
- D) Ibn al-Haytham

8. The 'Sphaerica', a foundational text on spherical trigonometry, was authored by which Greek mathematician?

- A) Menelaus of Alexandria**
- B) Apollonius
- C) Eudoxus
- D) Zenodorus

9. In 1593, which mathematician introduced the term 'trigonometria' in the title of his published work?

- A) Nicolaus Copernicus
- B) Bartholomaeus Pitiscus**
- C) Johannes Kepler
- D) Francois Viète

10. Which mathematician is credited with the first systematic use of the tangent function in the 10th century for calculating the heights of objects?

- A) Al-Biruni
- B) Al-Marwazi**
- C) Omar Khayyam
- D) Sharaf al-Din al-Tusi

11. Regiomontanus, a key figure in the development of European trigonometry, wrote which comprehensive text that separated trigonometry from astronomy?

- A) De Triangulis omnimodis**
- B) Canon Doctrinae Triangulorum
- C) Tabulae Directionum
- D) Opus Palatinum

12. The law of cosines, as applied in its modern form to all triangles, was historically synthesized through the work of which French mathematician?

- A) Pierre de Fermat
- B) Blaise Pascal
- C) Francois Viete**
- D) Gilles Personne de Roberval

13. Which mathematician utilized the infinite series for sine and cosine, now known as Taylor series, long before Taylor's formal publication?

- A) Madhava of Sangamagrama**
- B) Bhaskara II
- C) Parameshvara
- D) Nilakantha Somayaji

14. Who was the first mathematician to use the modern notations for sine, cosine, and tangent in his textbooks?

- A) Leonhard Euler**
- B) Isaac Newton
- C) John Wallis
- D) Abraham de Moivre

15. The term 'secant' was introduced into the trigonometric vocabulary by which Danish mathematician in the 16th century?

- A) Tycho Brahe
- B) Thomas Fincke**
- C) Ole Rømer
- D) Caspar Wessel

16. Which Islamic scientist calculated the sine of one degree with high precision by solving a cubic equation?

- A) Al-Kashi**
- B) Nasir al-Din al-Tusi
- C) Ibn Yunus
- D) Al-Farabi

17. In 1748, which seminal work did Leonhard Euler publish that established the modern analytical approach to trigonometry using exponential functions?

- A) Institutiones Calculi Differentialis
- B) Introductio in analysin infinitorum**
- C) Elements of Algebra
- D) Methodus Inveniendi

18. The first known use of 'sin' as an abbreviation in English language mathematical literature appeared in a work by which mathematician?

A) William Oughtred

B) Edmund Gunter

C) Henry Briggs

D) John Napier