

Trigonometric History and Constants

Trigonometry · Answer Key · 8 Questions

1. In the 2nd century BCE, which Greek astronomer compiled the first known table of chords, essentially laying the foundations for modern trigonometric tables?

- A) Hipparchus of Nicaea**
- B) Ptolemy
- C) Aristarchus of Samos
- D) Eratosthenes

2. The term 'sinus' (sine) was introduced into Latin in 1145 CE by which translator, who translated Al-Battani's work from Arabic?

- A) Robert of Chester**
- B) Gerard of Cremona
- C) Adelard of Bath
- D) William of Moerbeke

3. What is the exact value of the sine of 18 degrees, expressed in radical form as identified in classical algebraic geometry?

- A) $(\sqrt{5}-1)/4$**
- B) $(\sqrt{5}+1)/2$
- C) $\sqrt{10-2\sqrt{5}}/4$
- D) $(\sqrt{3}-1)/2$

4. In which century did the Indian mathematician Aryabhata introduce the concept of the 'jya' (sine) and 'kojya' (cosine) in his treatise 'Aryabhatiya'?

- A) 5th century CE**
- B) 6th century CE
- C) 7th century CE
- D) 8th century CE

5. The law of cosines, as expressed in the form $c^2 = a^2 + b^2 - 2ab \cos(C)$, was first formally generalized in the work of which 16th-century mathematician?

- A) François Viète**
- B) Regiomontanus
- C) Rheticus
- D) Gerolamo Cardano

6. Who was the first mathematician to define trigonometric functions as ratios rather than lengths of lines in a circle, in his 1748 work 'Introductio in analysin infinitorum'?

A) Leonhard Euler

B) Isaac Newton

C) Brook Taylor

D) John Wallis

7. The value of the 'sine' function for an angle of 3 degrees can be exactly represented using radicals involving which sequence of root extractions?

A) Nested square roots

B) Cube roots only

C) Fourth roots only

D) Sixth roots

8. In his 1551 publication 'Canon doctrinae triangulorum', which mathematician was the first to define all six trigonometric functions as ratios of the sides of a right triangle?

A) Georg Joachim Rheticus

B) Nicolaus Copernicus

C) Thomas Fincke

D) Pitiscus