**• 1900 BC**

“Babylonian astronomers kept details of stars, motion of the

planets, and solar and lunar eclipses. These all required

angular distance measured on celestial sphere.”

**• 1680 - 1620 BC**

“Egyptians used primituve forms of trigonometry for building

pyramids. Egyptians scribes, “If a pyramids is 250 cubits high

and the side of its base 360 cubits long, what is its

seked?” (History of Trigonometry Wikipedia) and (Mac Tutor

History)

• 180 - 125 BC

“Greek and hellenistic mathematicians made use of chords.

The first known table of chords was produced by the Greek

mathematician Hipparchus in about 140 BC. Although these

tables have not survived, it is claimed that twelve books of

tables of chords were written by Hipparchus. This makes

Hipparchus the founder of trigonometry.” (History of

Trigonometry Wikipedia) and (Mac Tutor History)

• 100 AD

“Menelaus of Alexandria wrote in three books to establish a

basis for spherical triangles.” He also gave his famous “rule of

six quantities.” Also had “Menelaus Theory.” (History of

Trigonometry Wikipedia) and (Mac Tutor History)

• 90 - 168 AD

Claudius Ptolemy expanded upon Hipparchus chords in a

circle.

• 476 - 550 AD

“Indian Mathematicians and astronomer Aryabhata expands on

the work of Surya Siddhanta, the first to define the sine as the

modern relationship between half and angle and half a chord,

while also defining the cosine.” (History of Trigonometry

Wikipedia) and (Mac Tutor History)

Islamic Mathematics

• 830 AD

Muhammand ibn Musa al-Kwarizmi produced accurate sine

and cosine tables, and the first table of tangents.

• 830 AD

Ha bash al-Hasib al Marwazi produced the first table

• 853 - 929 AD

“Muhammad ibn Jabir al Hahaai discovered the

reciprocal functions of secant and casecant, and

produced the table of cosecants for each degree from 1˚

to 90˚. He was also responsible for establishing a

number of important trigometrical

relationships.” (History of Trigonometry Wikipedia)

tan a = sin a

 cos a

• 10th Century

“Abu al-Wafa al-Buz jani were using all six trigonometric

functions. He had sine tables in 0.25˚ increments, to 8

decimal places of accuracy, and accurate tables of

tangent values.” (History of Trigonometry Wikipedia) He

also developed Angle Addition Identities

sin A = sin B = sin C

sin a sin b sin c

Chinese Mathematics

• 718 AD

Aryabhataʼs tables were translanted into Chinese

mathematics books.

• 960 -1279 AD

“During Song Dynasty, Chinese mathematicians began

to express greater emphasis for the need of spherical

trigonometry in calendrical science and astronomical

calculations.” (History of Trigonometry Wikipedia)

• 1231 - 1316 AD

“Guo Shoujing used spherical trigonometry to improve

the calendar system and Chinese astronomy”. (History

of Trigonometry Wikipedia)

\*No other publication of trigonometry came out for China

until 1607.

European Mathematics

• 1464 AD

“Regiomontanus was the first European to treat

trigonometry as a direct mathematical discipline. He

wrote a book called De triangulis omnimodus”. (History

of Trigonometry Wikipedia) and (Mac Tutor History)

• 1596 AD

“Conpernicus was the first to define trigonometric

functions directly in terms of right triangles instead of

circles, with tables for all six trigonometric functio