Date	Mathematician	Advancement, Discovery, Importance
~1300 BC	Ancient Egyptians	Elementary geometry and astronomy were used to construct religious temples (i.e.- pyramids were astronomically oriented. Had a calendar based on 365 days.
~1000-800 BC	Babylonians	Developed a lunar calendar based on astronomical data which included the day, month, and year. Divided the circle into 360 parts which plays a crucial role in angles and thus later planetary models.
~600 BC	Greeks	The Greek civilization began investigations of curved surface. Astronomically, they discovered circular motions of the planets move at a constant speed, and the movement of stars in the sky helped the notion of a curved earth.
~600 BC	Thales of Miletus Anaximander	Observed the moon shines due to reflection of the sun. First realization of great distances. Thought the sun and moon were larger than the earth.
~420 BC ~400 BC	Philolaus Plato	Celestial bodies move around a center of the universe. Thought celestial bodies are spherical and have circular motions.
~370 BC ~360 BC	Heracleides Eudoxus and Calippus	The earth rotates around its own axis. First attempt to represent celestial motion mathematically. First appearance of a geocentric model (planets revolve around earth). Represented the motion of planets by spheres (overestimate of planets). Formed the beginnings of spherical geometry.
~330 BC	Autolycus	Wrote an important book on spherical geometry. Without spherical geometry a limited amount of progress would take place in astronomy.
~265 BC	Aristarchus of Samos	Measurement of relative distances to sun and moon from earth. Using the measurement of angles, gathered the sun was farther away than the moon. First attempt to measure distances of celestial bodies based on geometric principles.
~250 BC	Apollonius	Worked with conic sections. Described planetary motion using a system of circles based on epicycles and deferents
~220 BC	Eratosthenes	Measured the circumference of the earth with an error of 1% of the actual distance. He used logic and angle measures to calculate the distance.
~170 BC	Hipparchus	Used elementary spherical trigonometry. Coined eccentric motion which means circular orbits),
129 AD	Ptolemy	*Almagest: Geocentric Model improved the previous model of celestial motion using epicycles, deferents, and eccentrics. Had an idea about angular velocity verses linear velocity. Calculated the chords of arcs of circles, and knew the modern trigonometry principle that sine squared plus cosine squared equals 1.*
1514 and 1530s	Copernicus	Founded the idea of the heliocentric solar system. Claimed the universe is spherical. Made use of trigonometry tables. His discoveries led to the use of calculus and Newton's gravitational laws.

~1560	Tycho Brahe	Produced better observational tools by using and knowing mathematics about arcs. He is known for his tedious observations of the solar system, and developed his own model.
1609	Kepler	Used knowledge of ellipses to discover the elliptical orbits of the planets and the heliocentric system. Planets have nonuniform velocities. Observed: A line joining a planet to the sun traces out equal amounts of area in equal amounts of time, and the square of a period of the planet is proportional to the cube of its distance from the sun
1630s	Galileo	Invented the telescope. Convinced the world of the heliocentric solar system model, and had an idea of elementary Newtonian gravitation.
1781	William and Caroline Herschel	Discovered Uranus using a low powered telescope.
1830s	Adams and LeVerrier	Both independently mathematically calculated that there is a planet beyond Uranus (i.e.-Neptune). This is the first time a planet was discovered from mathematical analysis.
1846	Hohan Galle	First observed the planet Neptune.
1930	Clyde Tombaugh	Discovers Pluto.