

Presentations02A

Use the figurate square numbers to prove that the sum of the first n odd numbers is n^2 .	1
Use the method of Hippocrates to calculate the area of a lune. (See page 5 of today's notes for a picture.)	2
Use the Quadratrix of Hippias to trisect an angle. See https://en.wikipedia.org/wiki/Quadratrix_of_Hippias for a proof.	3
Use the Quadratrix of Hippias to square the circle. (See the above link for this one too.)	4
Alpha Centauri, the nearest star is about 4.3 light years away; the diameter of earth's orbit is about 180,000,000 miles. How far away would a dime (flat side facing you) subtend the same angle as the parallax angle for Alpha Centauri from opposite ends of earth's orbit.	5
Prove that the fifth postulate of Euclid holds if and only if the sum of the angles of triangle is 180° .	6
Pons Asinorum: what is it and work through the details.	7
Prove the Exterior Angle Theorem.	8
Show how Eratosthenes calculated the size of the earth.	9
Use the spiral of Archimedes to trisect an angle.	10