Lesson 9

GCSE and Preparatory A-Level Mathematics

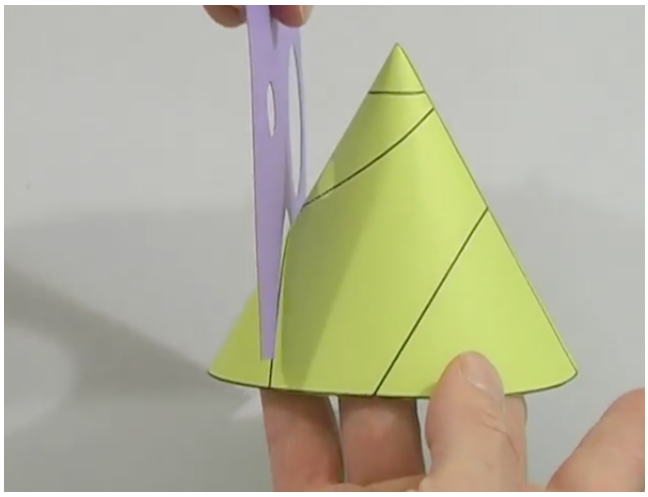
Conic Sections (Simultaneous Equations IV)

9.1 A Conic Sections Model

The ancient Greek mathematicians studied conic sections culminating around 200 BC with Apollonius of Perga's systematic work on their properties. The mathematical interest in conic sections arises because four seemingly different two dimensional shapes, the circle, elipse, parabola and hyperbola, are unexpectedly connected by a single three dimensional object, a cone.

It is possible to buy a wooden cone that can be taken apart like a three dimensional jig-saw puzzle to show the four possible conic sections. Often sold as an Appolonius Cone, the 22 cm high cone costs £90, and the 50 cm version is £440 (Prices correct as of January 2025).

Rather than spend money, we can build our own version for negligible expense. The two minute instruction video is from the excellent book, “Amazing Math Projects You Can Build Yourself” (Available on Amazon, £10).



Teaching Video : http://www.NumberWonder.co.uk/v9091/9.mp4

Over the page are the templates to cut out or trace onto paper from a computer screen and so make the model.

There will be a prize for the best.

(Send in a photograph).