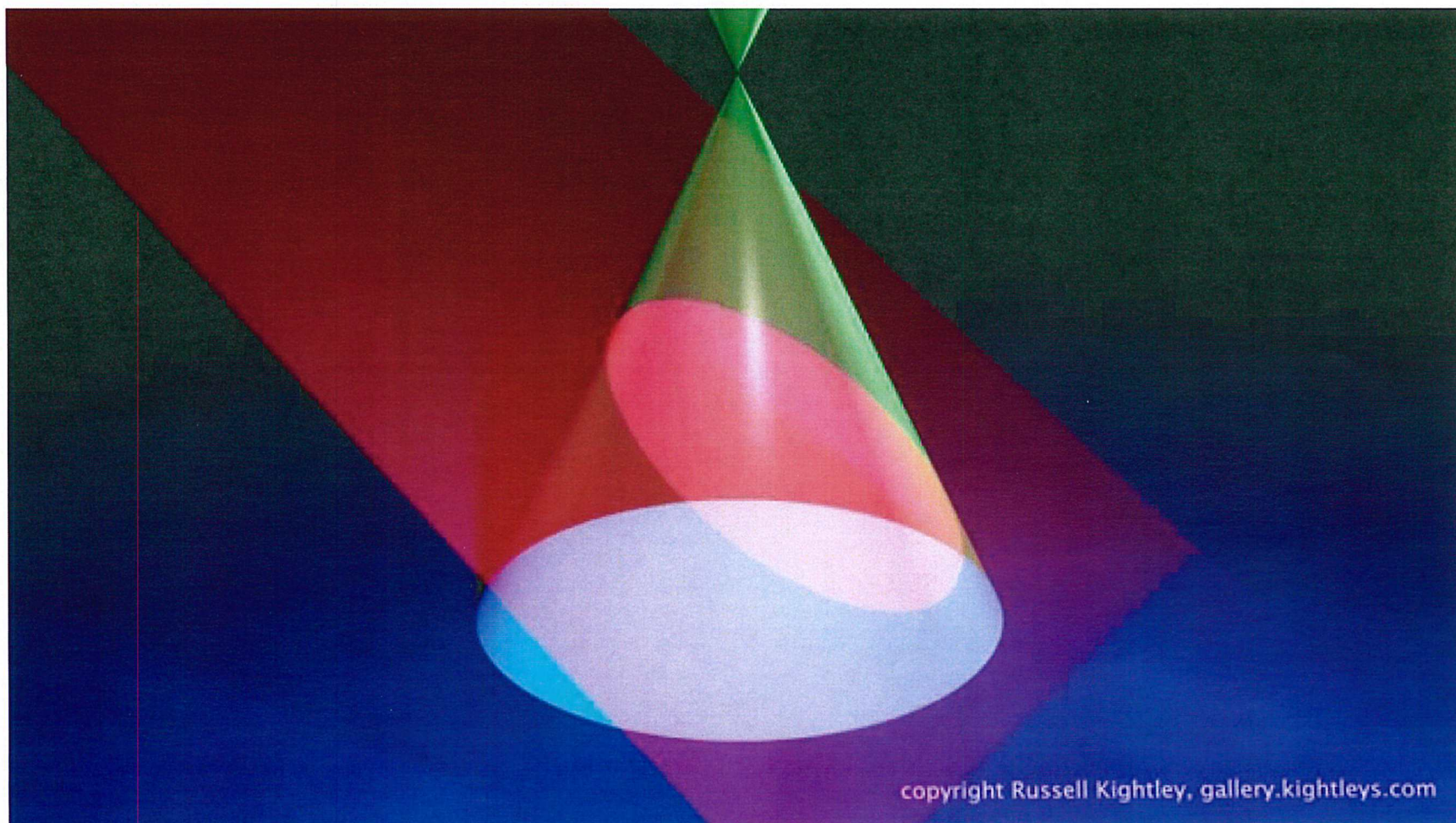
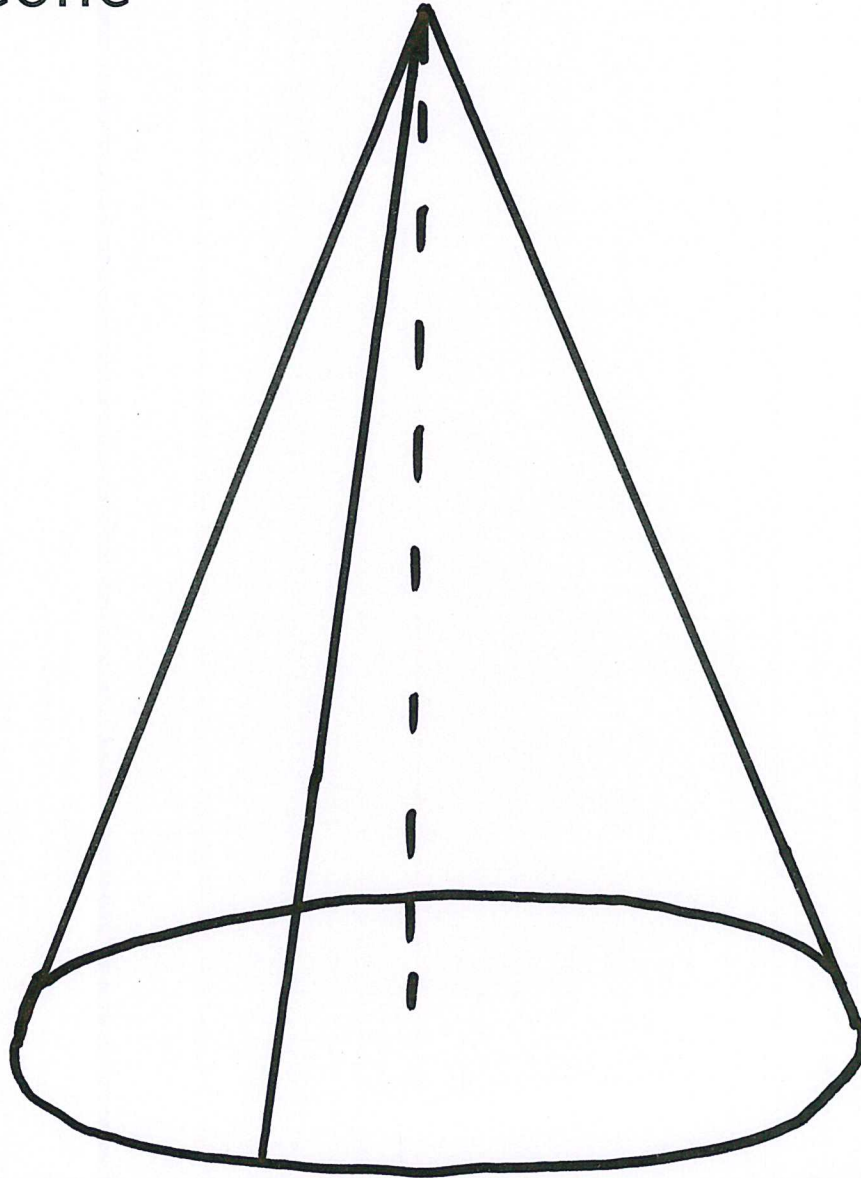


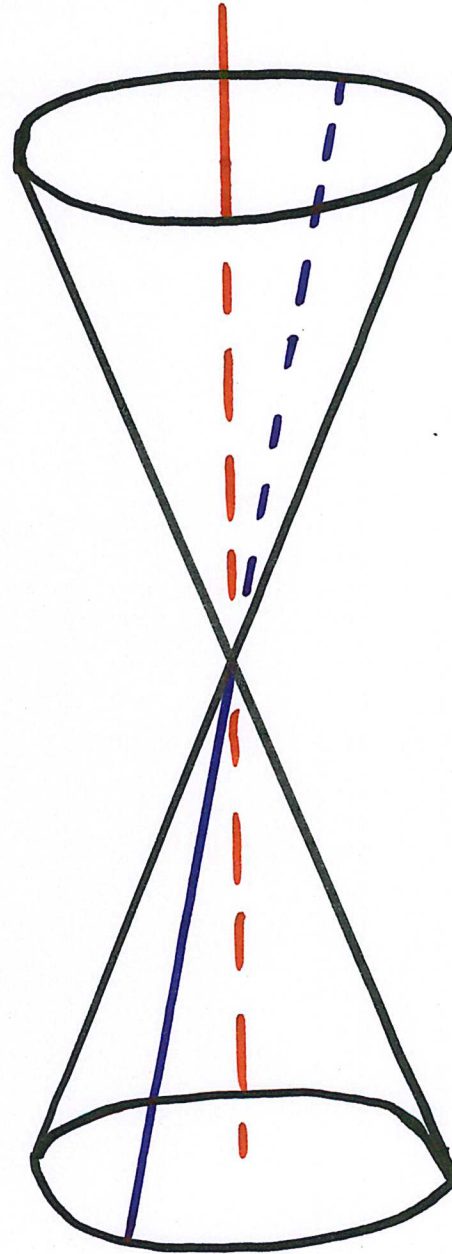
Conic Constructions



Terminology: Cone

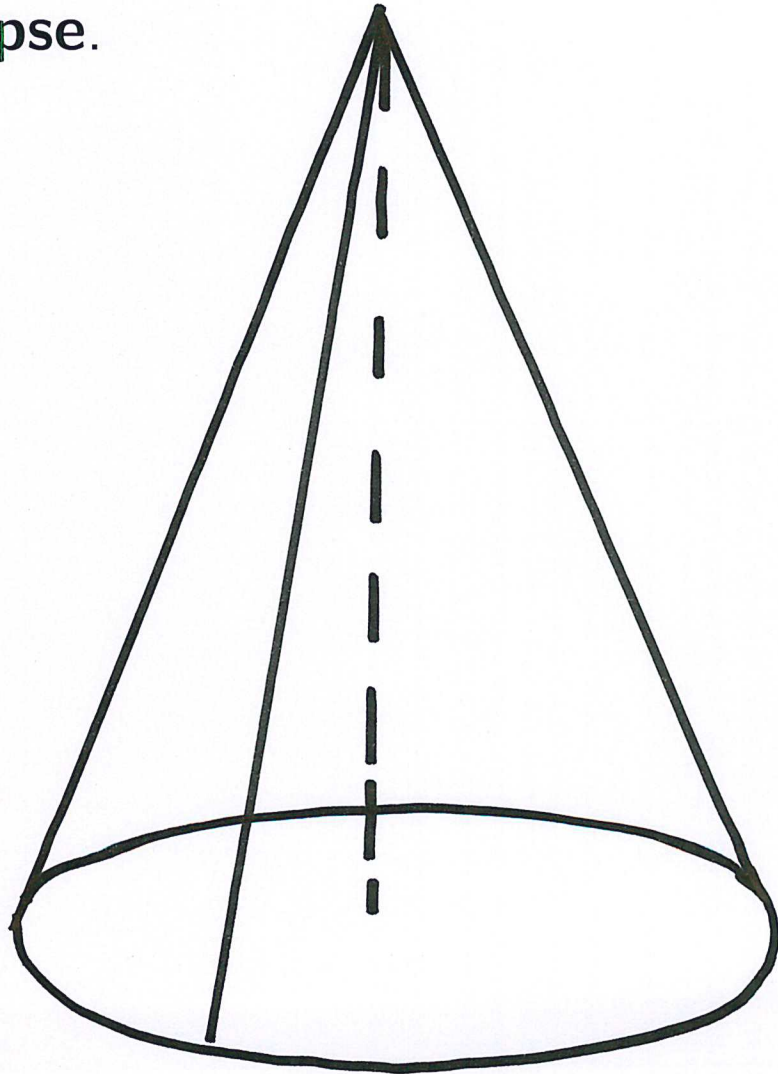


Terminology: Double Cone



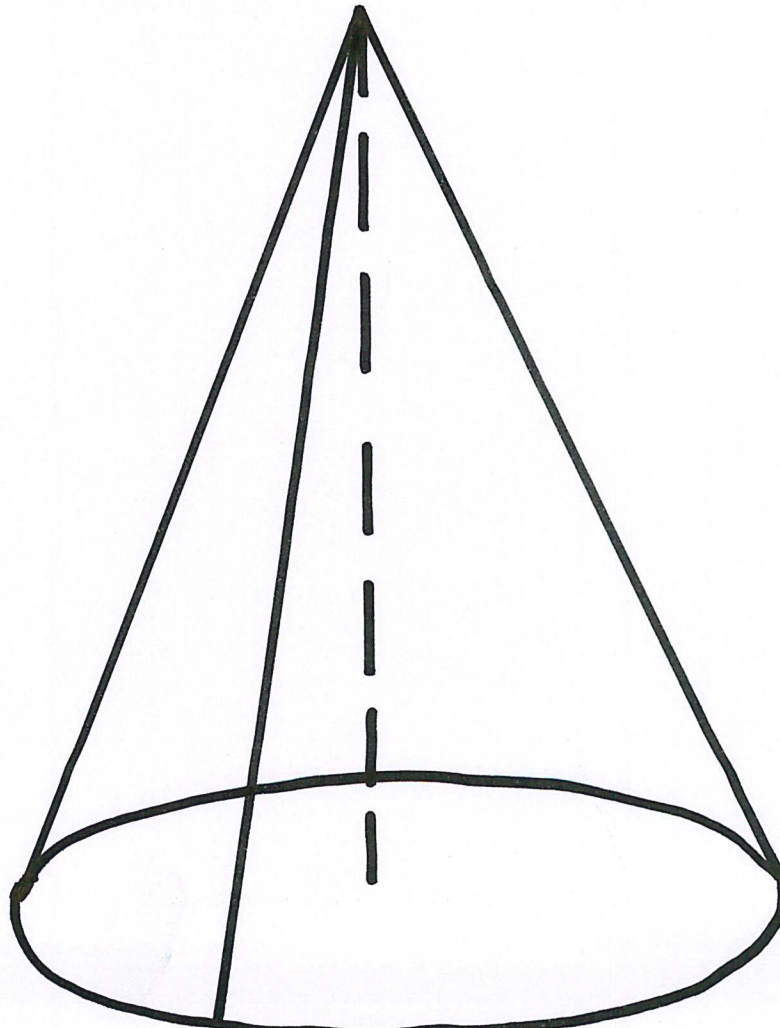
Conic Sections: Ellipse

If we cut the cone with a plane that intersects all the slant heights, the resulting shape is an **ellipse**.



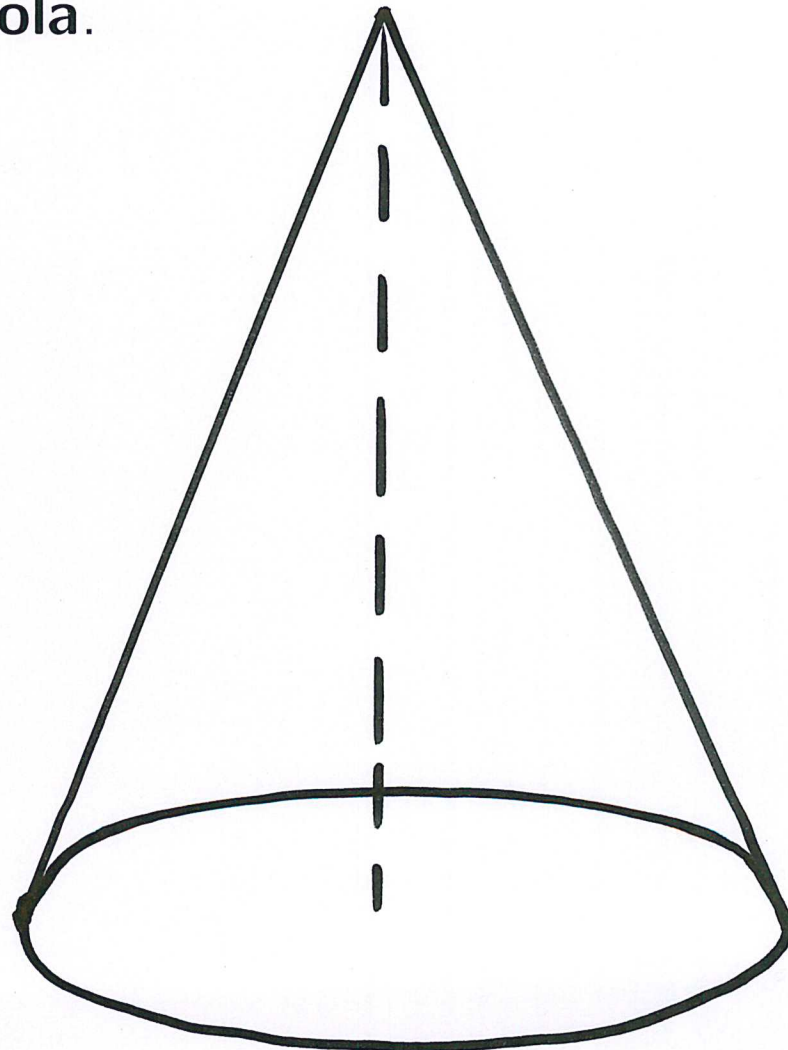
Conic Sections: Circle

If we cut the cone with a plane that intersects all the slant heights and is perpendicular to the axis, the resulting shape is a **circle**.



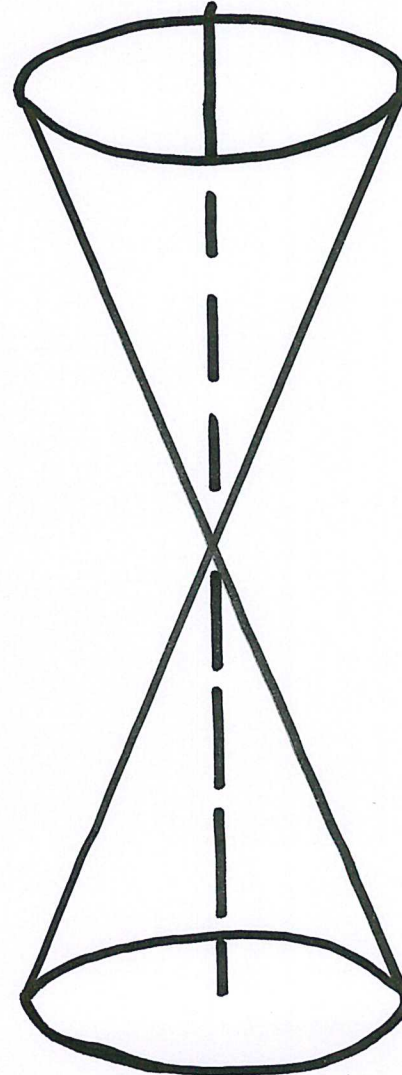
Conic Sections: Parabola

If we cut the cone with a plane that is parallel to a tangent plane, the resulting shape is a **parabola**.



Conic Sections: Hyperbola

If we cut the double cone with a plane that intersects both nappes, the resulting shape is a **hyperbola**.



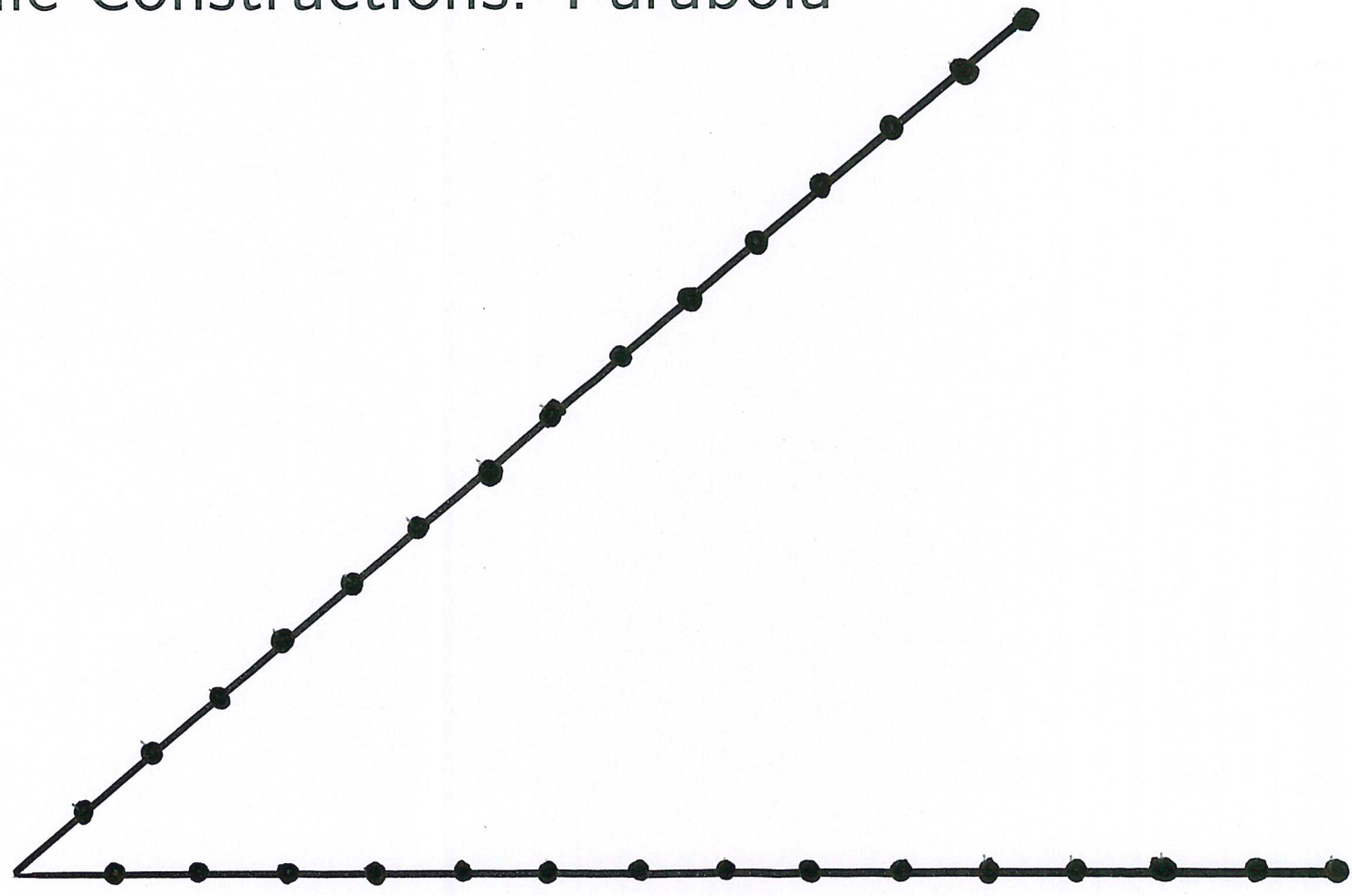
Conic Sections & Quadratic Equations

- circle:
- ellipse:
- parabola:
- hyperbola:

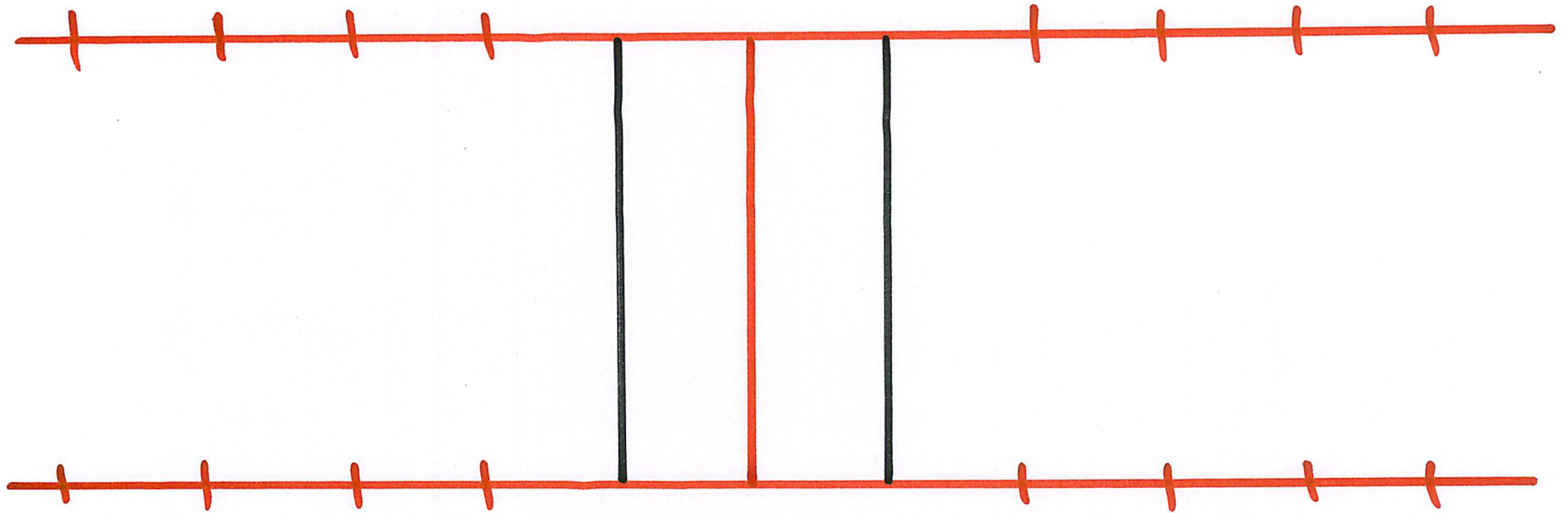
In General: A 2nd degree equation in x and y is

All non-trivial equations of this type describe conic sections.

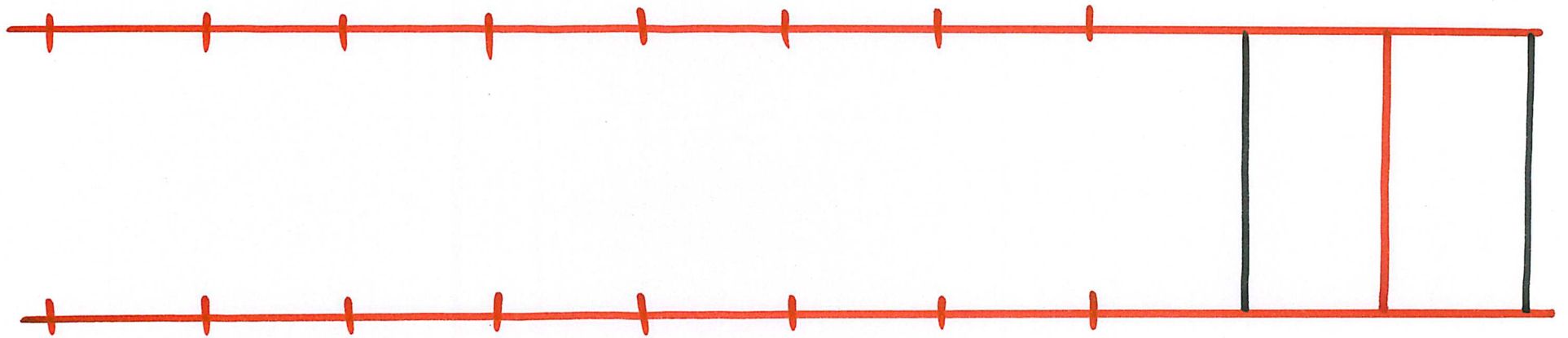
Conic Constructions: Parabola



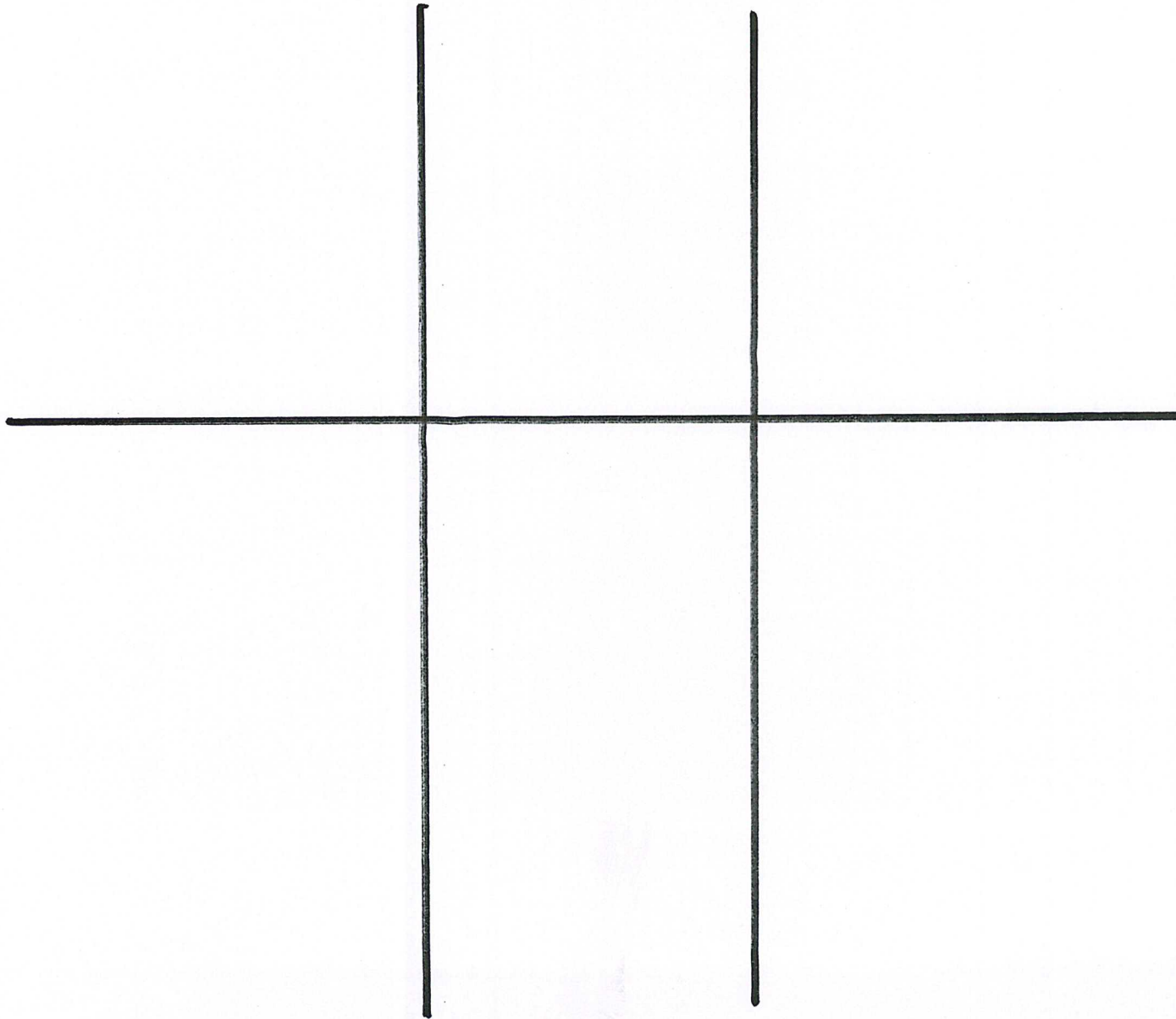
Conic Constructions - Ellipse (Circle)



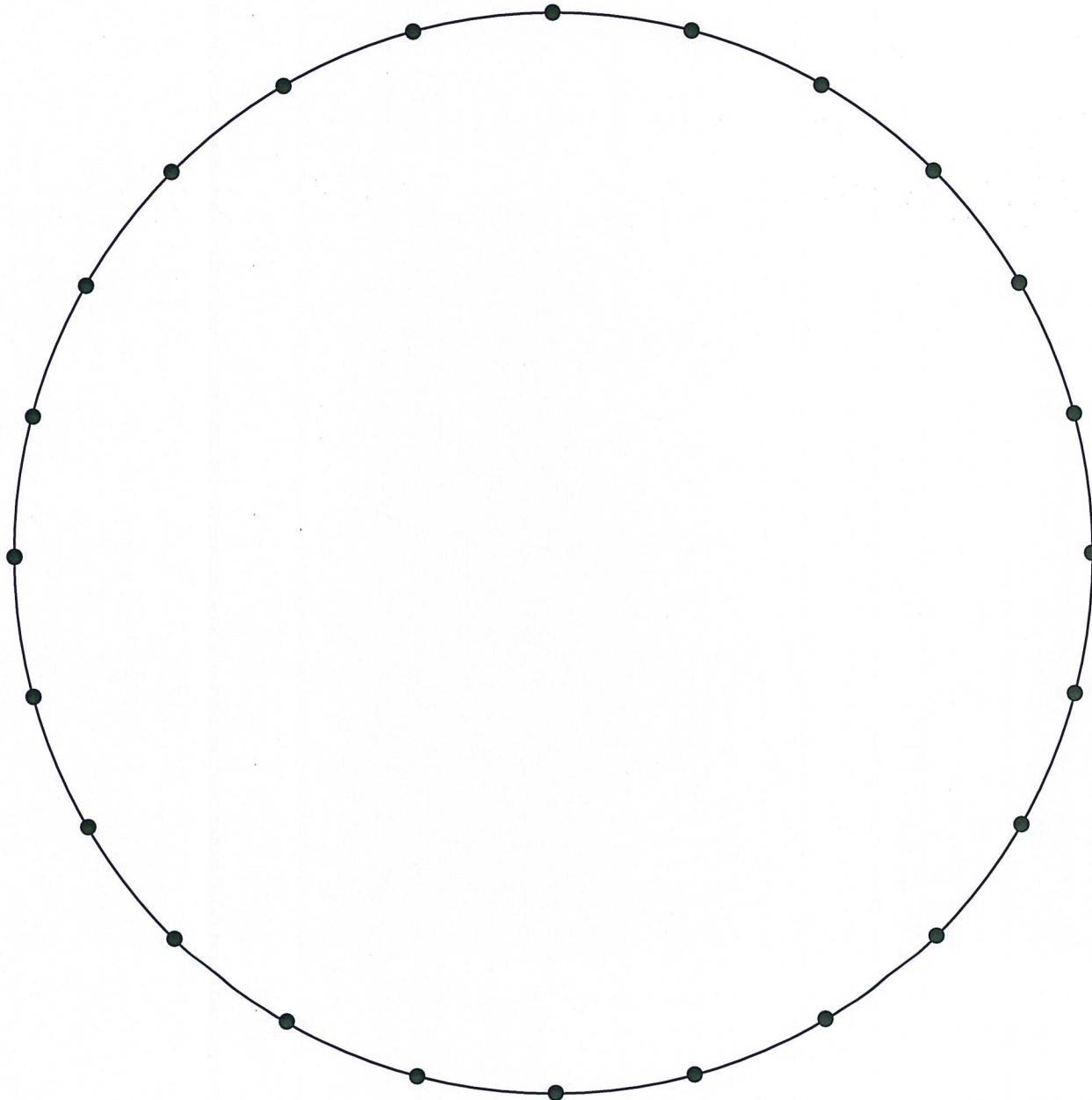
Conic Constructions - Circle



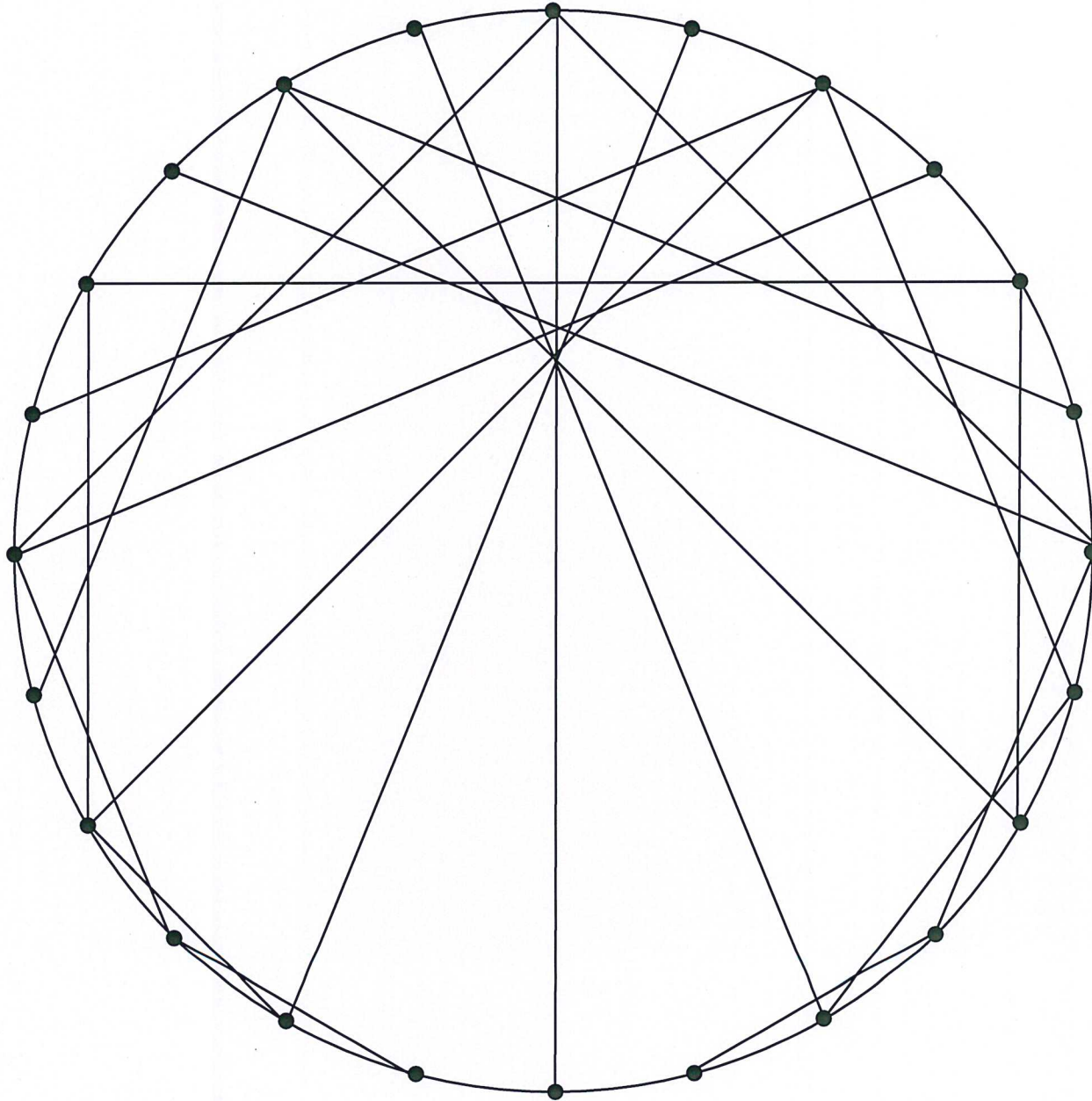
Conic Constructions - Hyperbola



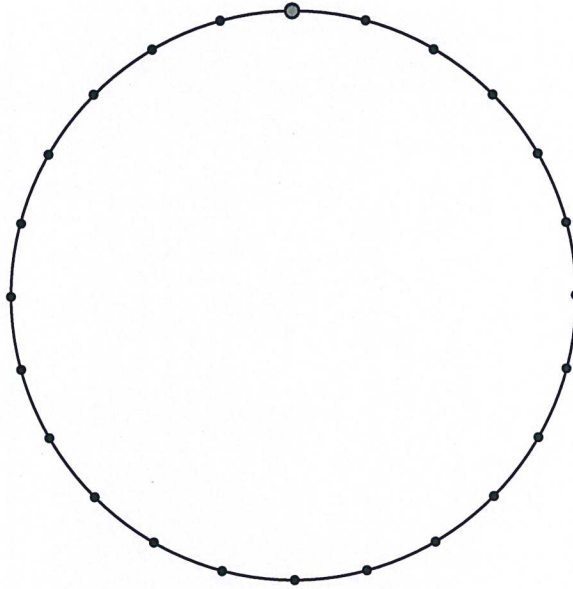
Conic constructions - cardioid (i)



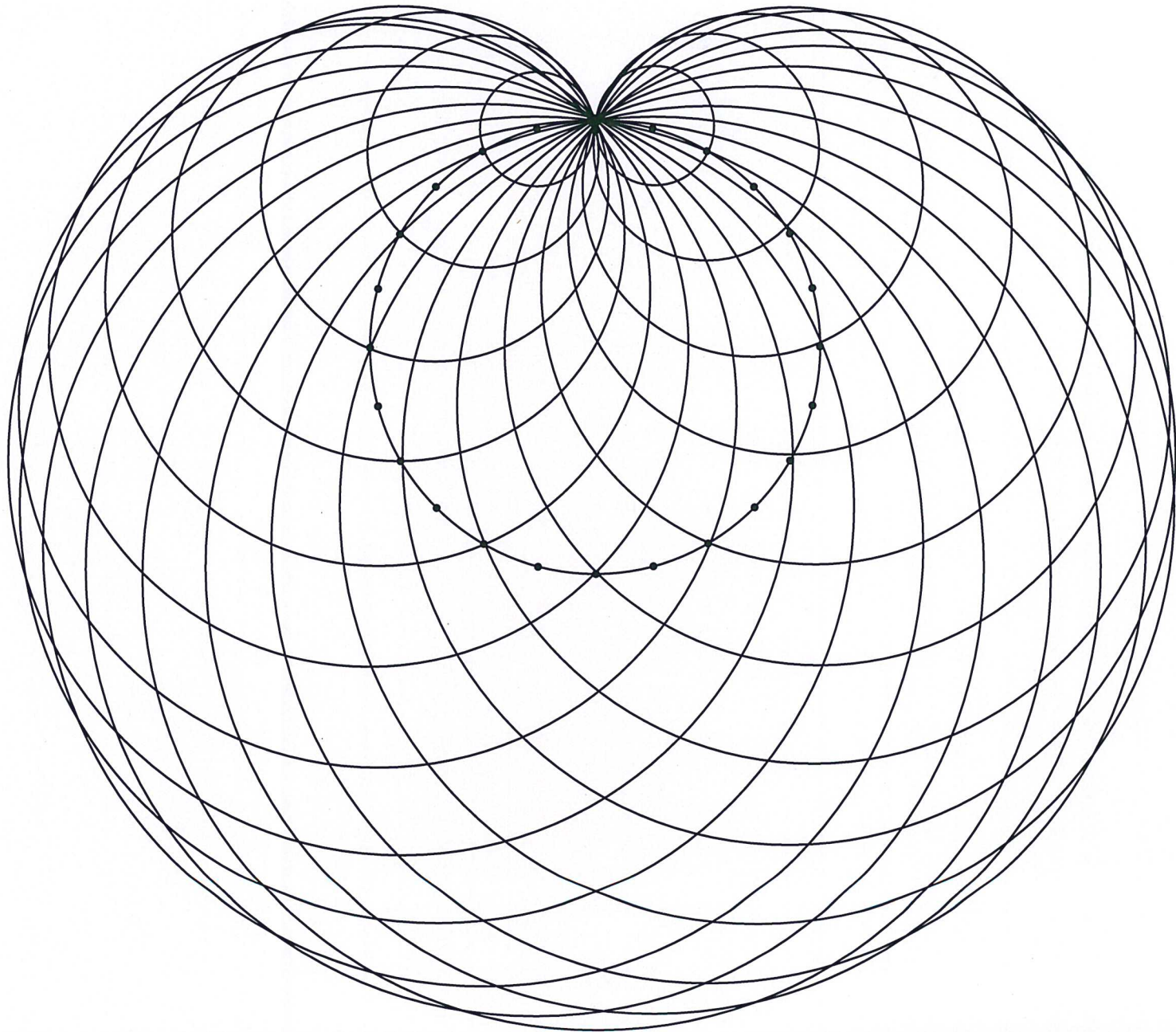
Conic constructions - cardioid (1)

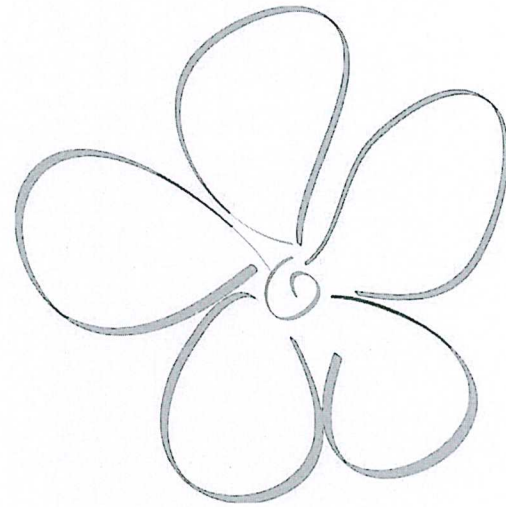


Conic constructions - cardioid (2)



Conic constructions - cardioid (2)





QUESTIONS???