

Chapter 1

The Conic Sections

Throughout this chapter, the following variables will represent special values concerning conic sections.

Table 1.1: Special Values in Conic Sections

a	The length of the semi-major axis. ¹
b	The length of the semi-minor axis. ²
n	The x-offset of the conic from the origin.
m	The y-offset of the conic from the origin.

1.1 The Circle

Definiton 1.1.1 (The Standard Equation of the Circle). $(x + n)^2 + (y + m)^2 = c$

In the circle, the length of the semi-major axis is also known as the radius.

1.2 The Ellipse

Definiton 1.2.1 (The Standard Equation of the Ellipse). $\frac{(x + n)^2}{a^2} + \frac{(y + m)^2}{b^2} = 1$

1.3 The Parabola

Definiton 1.3.1 (The Standard Equation of the Parabola). $y = 4ax$

1.4 The Hyperbola

Definiton 1.4.1 (The Standard Equation of the Ellipse). $\frac{(x + n)^2}{a^2} - \frac{(y + n)^2}{b^2} = 1$