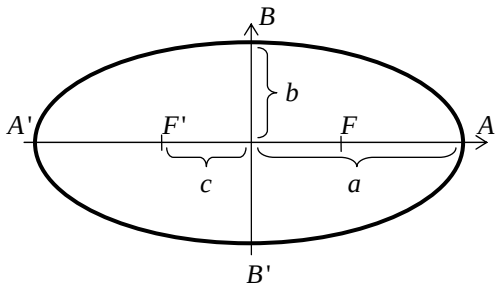
Fórmulas de cónicas (elipse, hipérbola y parábola)

Elipse

$$\frac{x^2}{a^2}+\frac{y^2}{b^2}=1 \qquad a^2=b^2+c^2$$



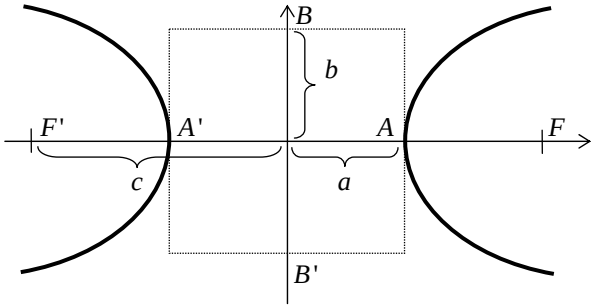
Semieje mayor = a
Semieje menor = b
Semidistancia focal = c

Excentricidad $e=\frac{c}{a},\ e<1$

Vértices $A'(-a, 0),\ A(a, 0),\ B'(0, -b),\ B(0, b)$
Focos $F'(-c, 0),\ F(c, 0)$

Hipérbola

$$\frac{x^2}{a^2}-\frac{y^2}{b^2}=1 \qquad c^2=a^2+b^2$$



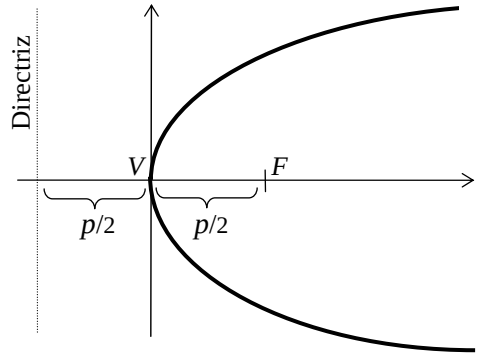
Semieje = a
Semidistancia focal = c

Excentricidad $e=\frac{c}{a},\ e>1$

Vértices reales $A'(-a, 0),\ A(a, 0)$
Vértices imaginarios $B'(0, -b),\ B(0, b)$
Focos: $F'(-c, 0),\ F(c, 0)$
Asíntotas: $y=\pm\frac{b}{a}x$

Parábola

$y^2 = 2px$



Vértice: $V(0, 0)$

Directriz $x=-\frac{p}{2}$

Foco $F\left(\frac{p}{2}, 0\right)$