

Cônicas

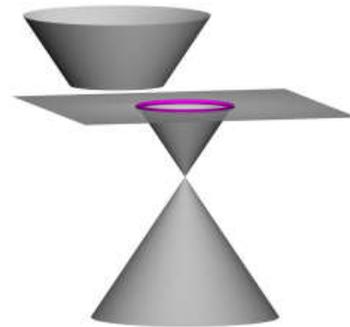


Fig. 1: Círculo.

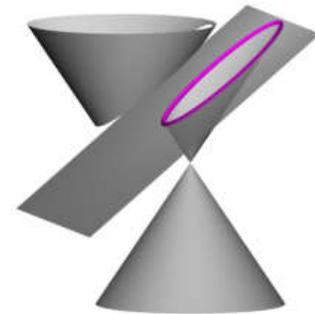


Fig. 2: Elipse.

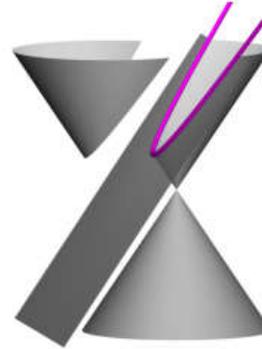


Fig. 3: Parábola.

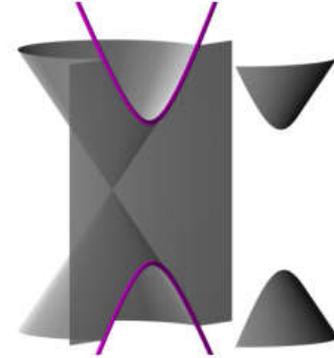
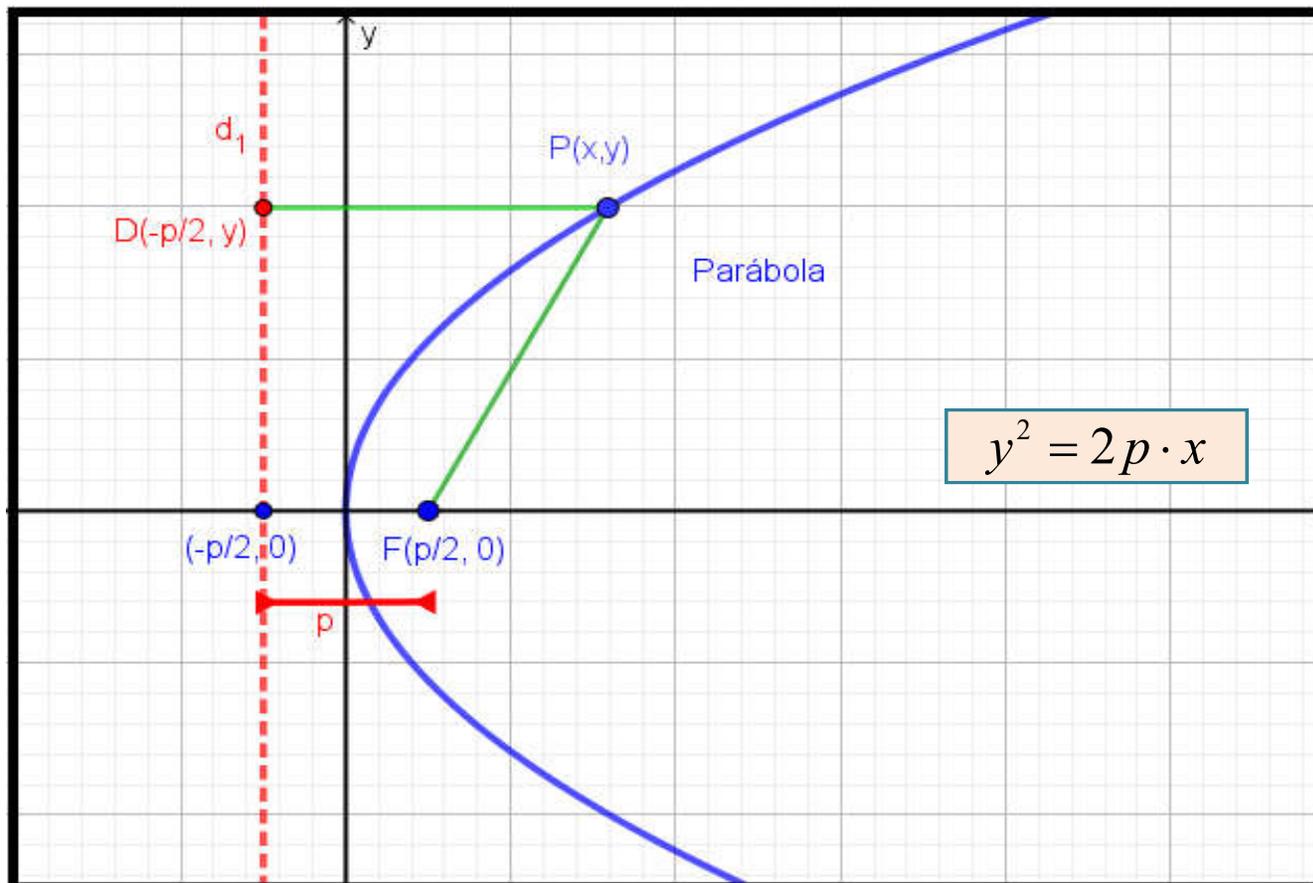


Fig. 4: Hipérbole.

Parábola

Cônicas

Definição: $d(P, F) = d(P, d)$



Parábola

Cônicas

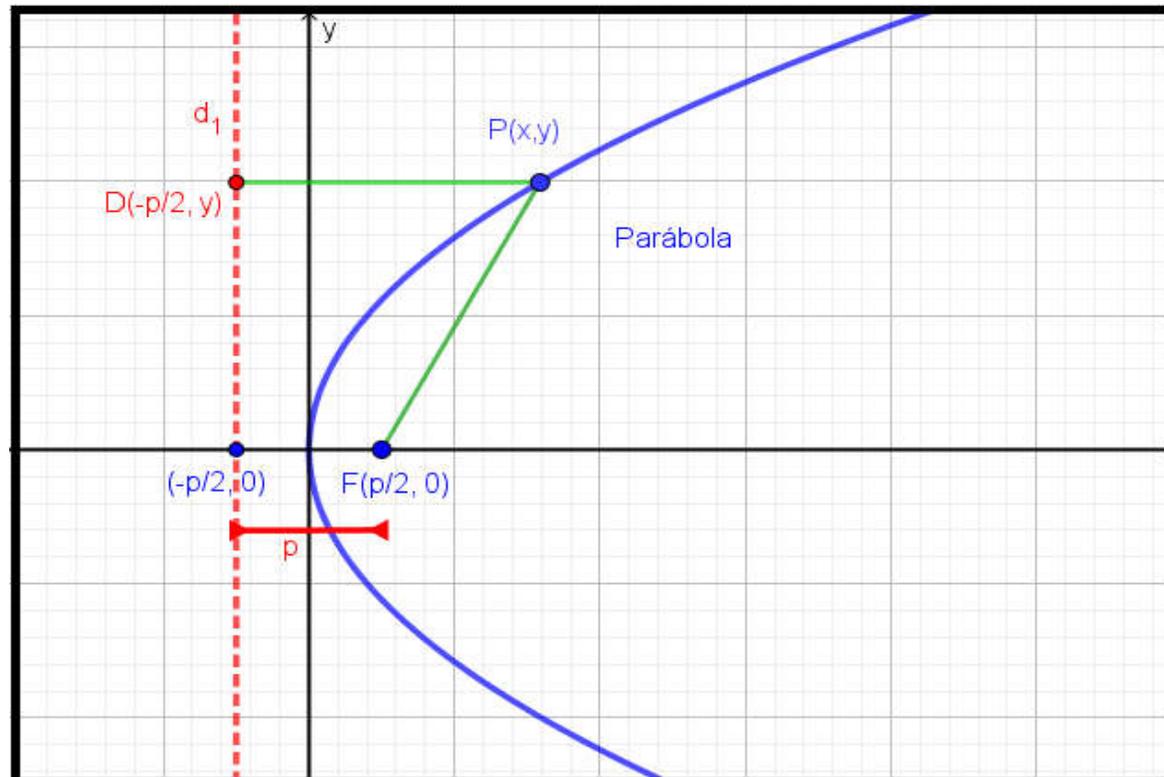
Elementos:

Foco: **F**

Vértice: **V**

Diretriz: **reta d**

Eixo: **passa pelo foco e é perpendicular à diretriz**

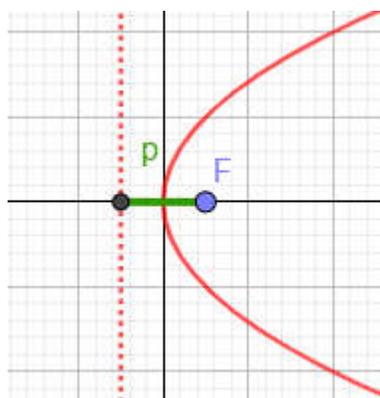


Parábola

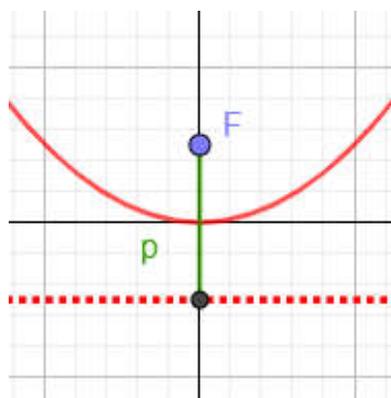
Equação Reduzida

Cônicas

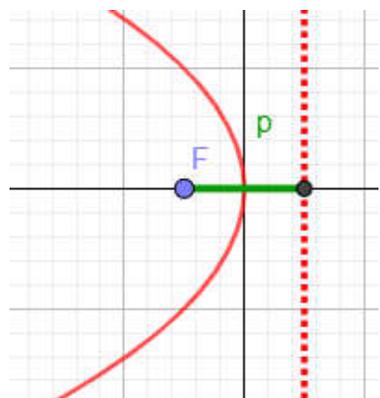
$$y^2 = 2p \cdot x$$



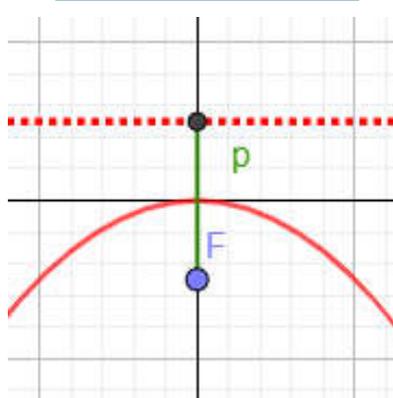
$$x^2 = 2p \cdot y$$



$$y^2 = -2p \cdot x$$



$$x^2 = -2p \cdot y$$



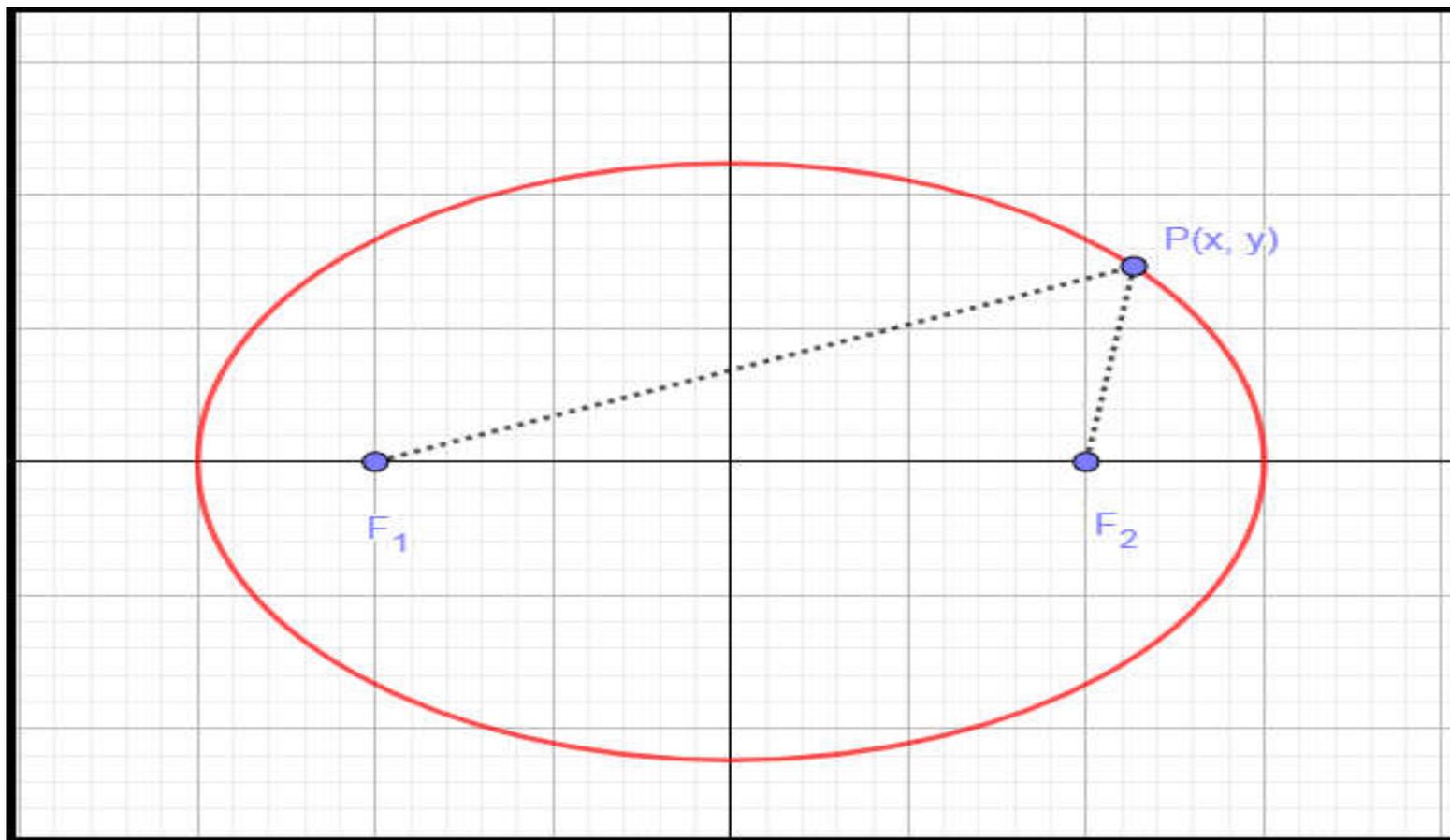
Centro deslocado

$$(y - y_c)^2 = 2p \cdot (x - x_c)$$

Elipse

Cônicas

Definição: $d(P, F_1) + d(P, F_2) = 2a$

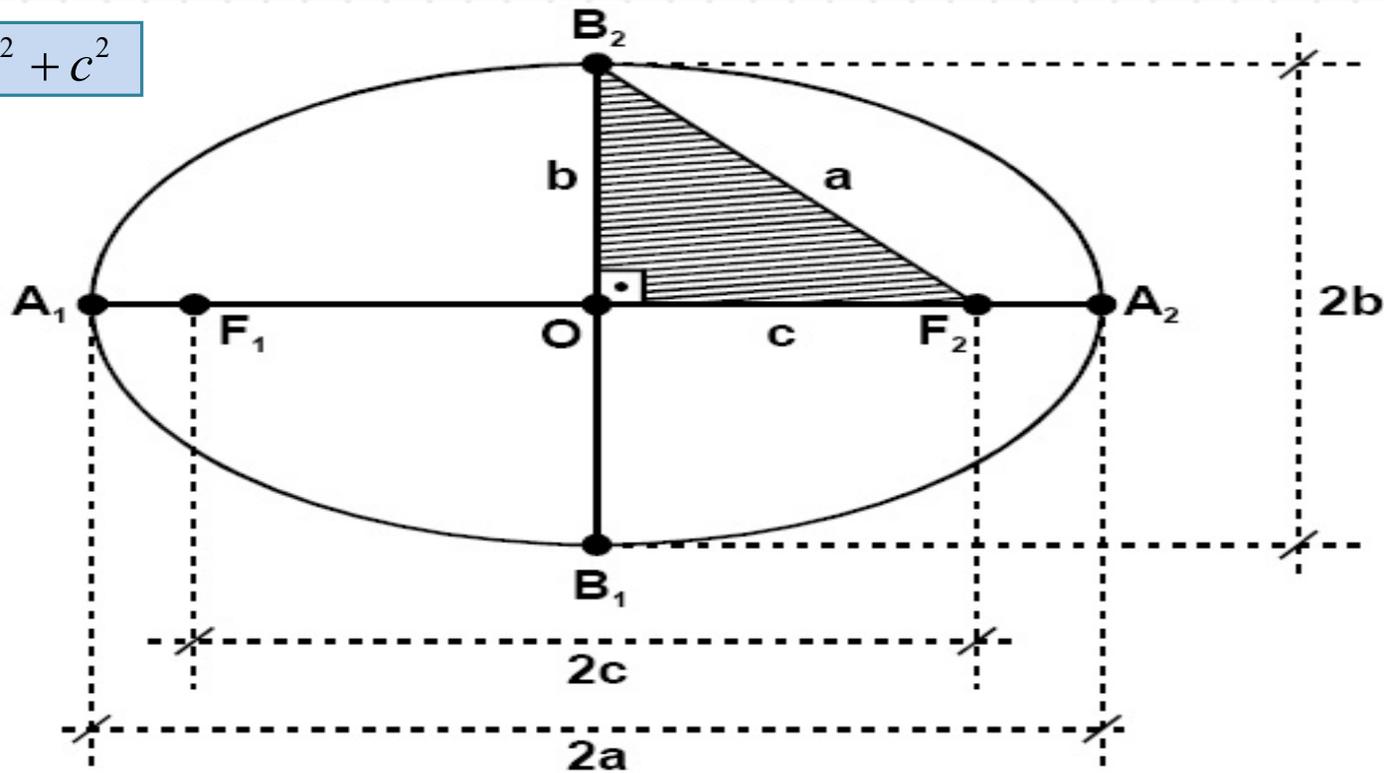


Elipse

Elementos

Cônicas

$$a^2 = b^2 + c^2$$



Focos: F_1 e F_2
Distância Focal: $2c$
Centro: O
Vértices: A_1, A_2, B_1 e B_2

Eixo maior: $A_1A_2 = 2a$
Eixo menor: $B_1B_2 = 2b$
Excentricidade: $e = c/a$ $0 < e < 1$.

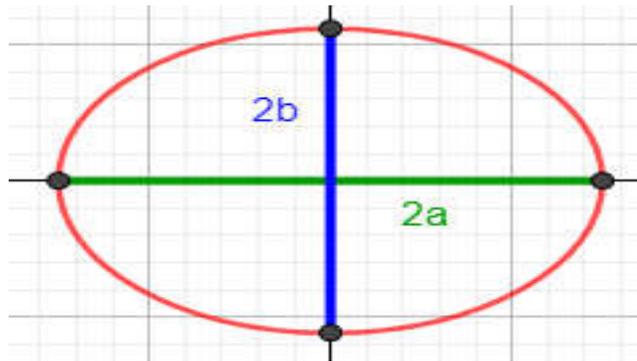
Elipse

Equação Reduzida

Cônicas

Eixo Maior Horizontal

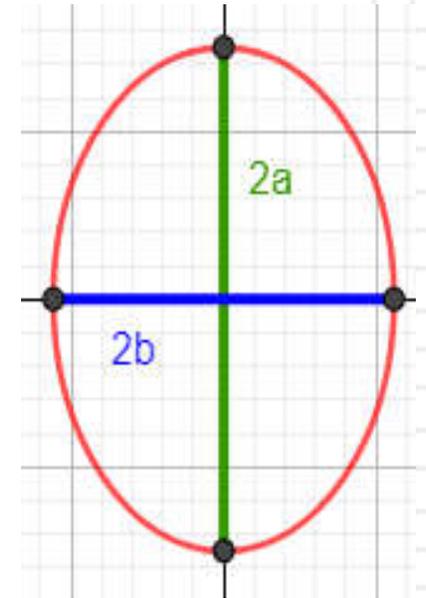
$$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$$



$$a^2 = b^2 + c^2$$

Eixo Maior Vertical

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



$$a^2 = b^2 + c^2$$

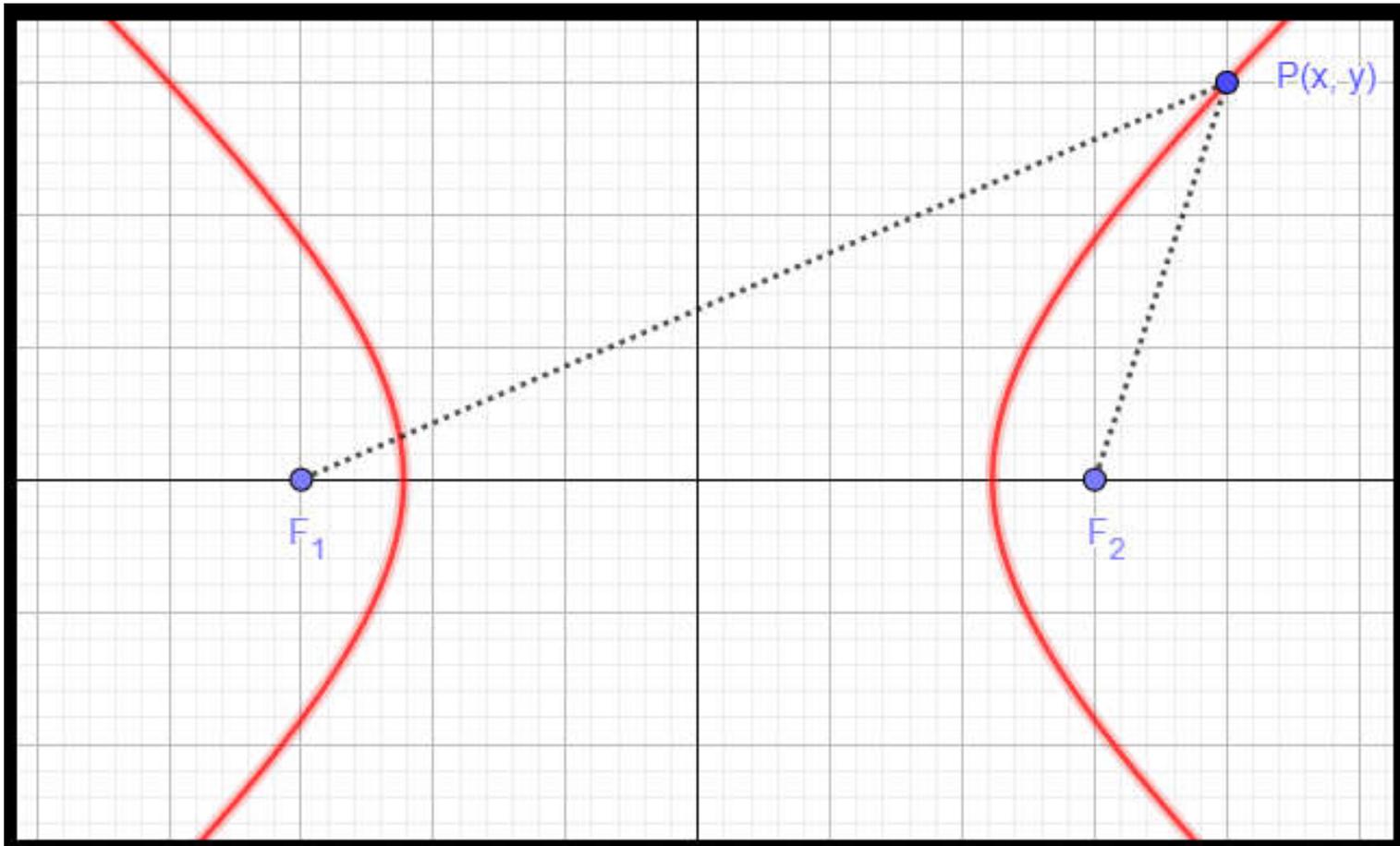
Centro deslocado

$$\frac{(x - x_c)^2}{a^2} + \frac{(y - y_c)^2}{b^2} = 1$$

Hipérbole

Cônicas

Definição: $|d(P, F_1) - d(P, F_2)| = 2a$



Hipérbole

Cônicas

$$c^2 = a^2 + b^2$$

Elementos:

Focos: F_1 e F_2

Distância Focal: $2c$

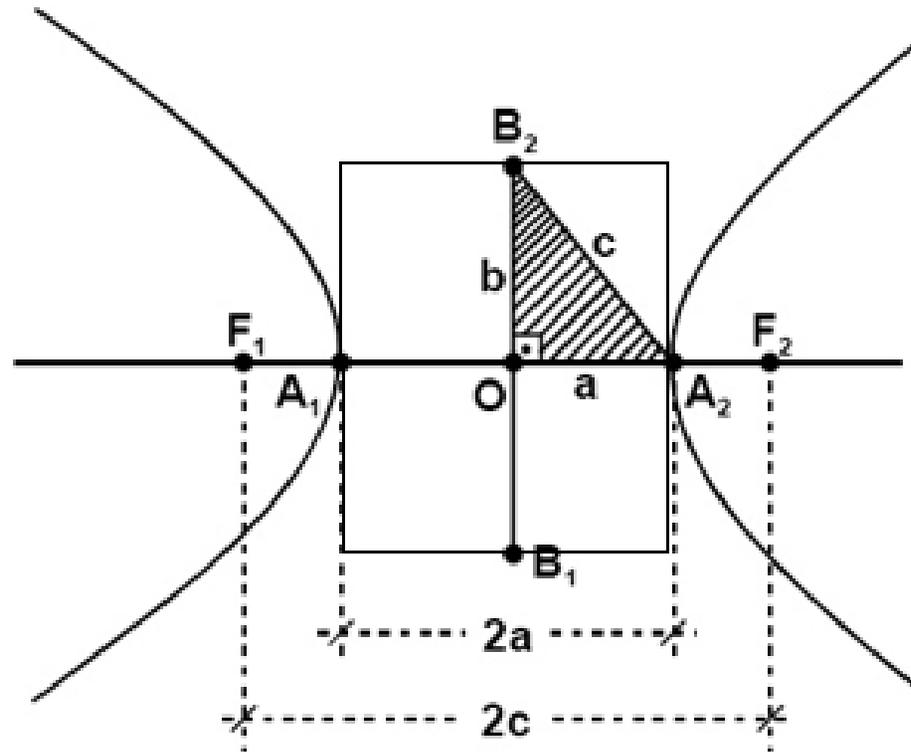
Centro: O

Vértices: A_1 e A_2

Eixo Real ou transverso: $A_1A_2 = 2a$

Eixo imaginário ou conjugado: $B_1B_2 = 2b$

Excentricidade: $e = c/a$ $e > 1$



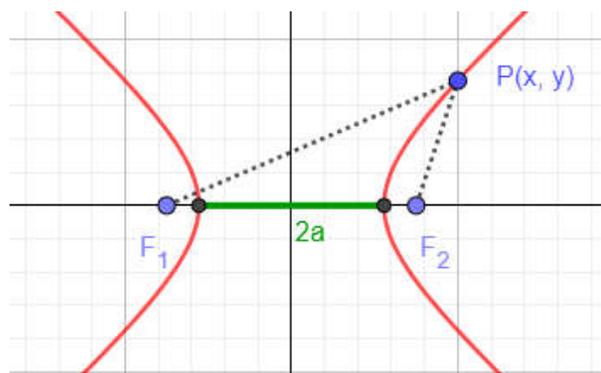
Hipérbole

Equação Reduzida

Cônicas

Eixo Real horizontal

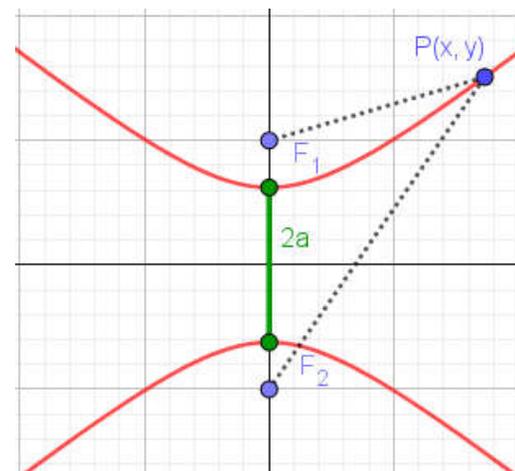
$$\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$$



$$c^2 = a^2 + b^2$$

Eixo Real vertical

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



$$c^2 = a^2 + b^2$$

Centro deslocado

$$\frac{(x - x_c)^2}{a^2} - \frac{(y - y_c)^2}{b^2} = 1$$