

Formulario de Geometría Analítica Matemáticas Fundamentales UTP



FÓRMULAS DE DISTANCIA Y PUNTO MEDIO

Distancia entre $P_1(x_1, y_1)$ y $P_2(x_2, y_2)$:

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

Punto medio de P_1P_2 : $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$

RECTAS

Pendiente de una recta que pasa por $P_1(x_1, y_1)$ y $P_2(x_2, y_2)$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Ecuación de punto-pendiente de una recta que pasa por $P_1(x_1, y_1)$ con pendiente m

$$y - y_1 = m(x - x_1)$$

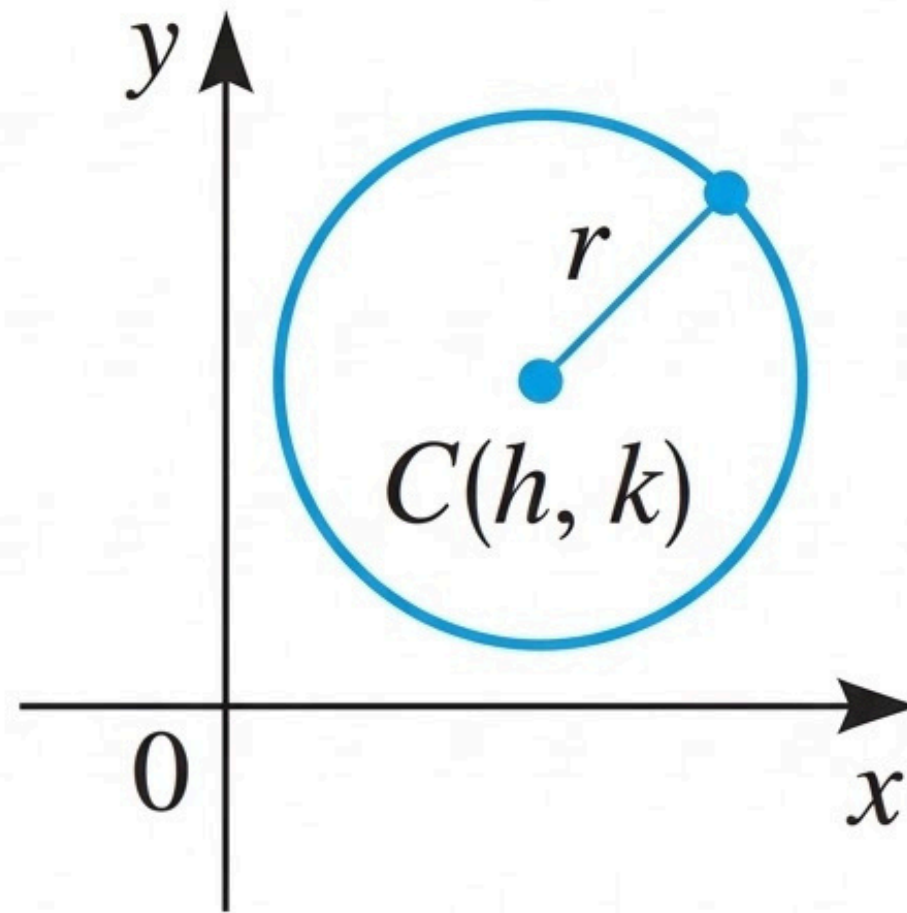
Ecuación de pendiente e intercepción de recta con pendiente m y punto de intercepción y en b

$$y = mx + b$$

SECCIONES CÓNICAS

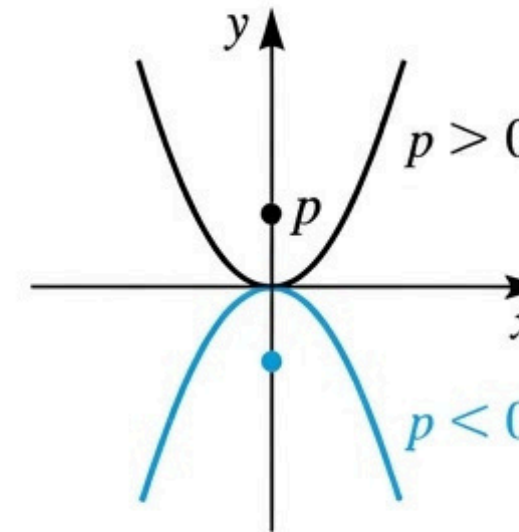
Circunferencias

$$(x - h)^2 + (y - k)^2 = r^2$$

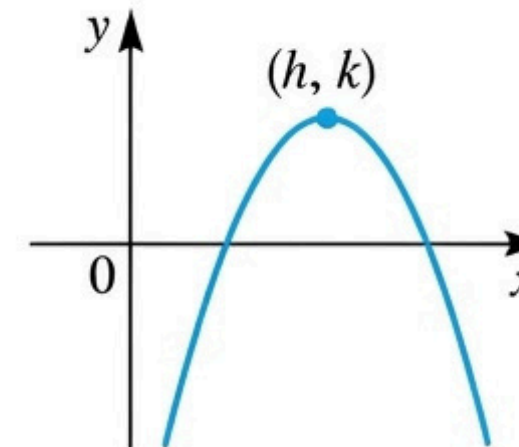


Parábolas

$$x^2 = 4py$$

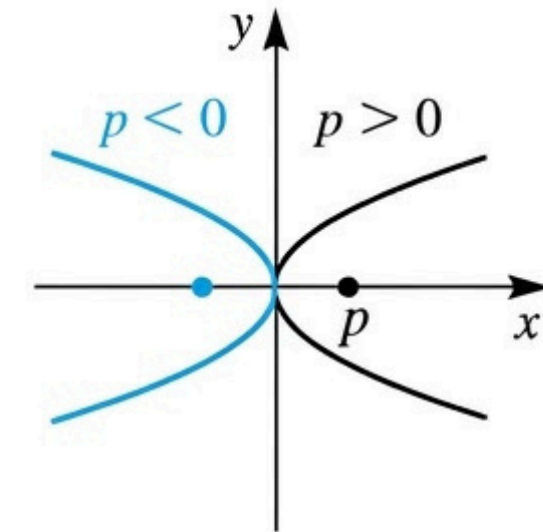


Foco $(0, p)$, directriz $y = -p$

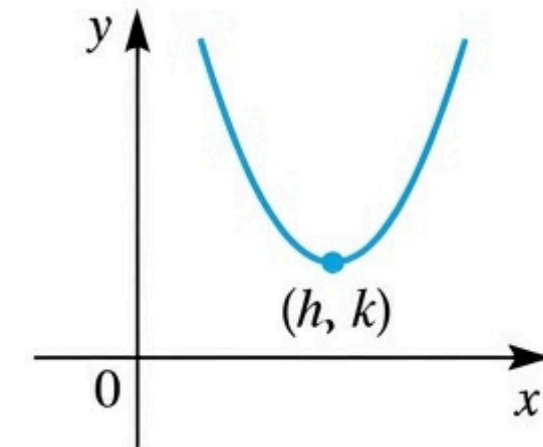


$$y = a(x - h)^2 + k, \\ a < 0, \quad h > 0, \quad k > 0$$

$$y^2 = 4px$$



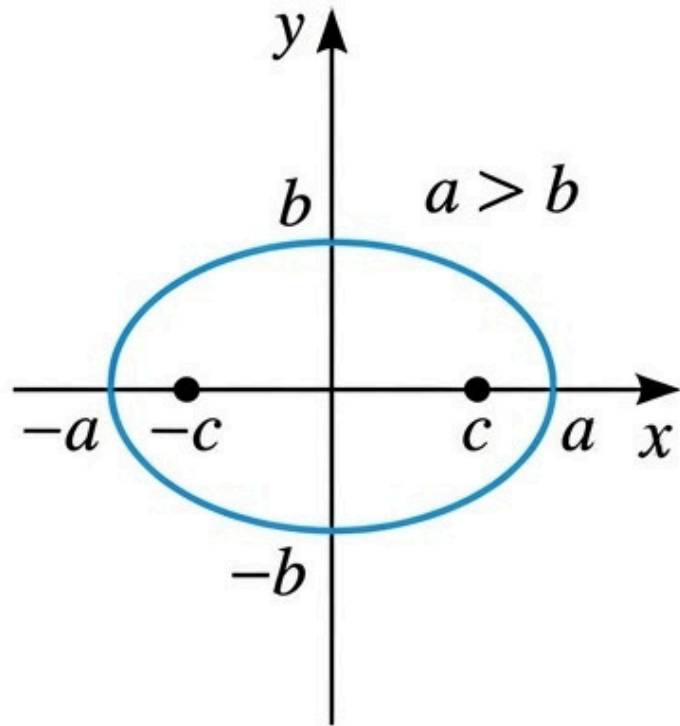
Foco $(p, 0)$, directriz $x = -p$



$$y = a(x - h)^2 + k, \\ a > 0, \quad h > 0, \quad k > 0$$

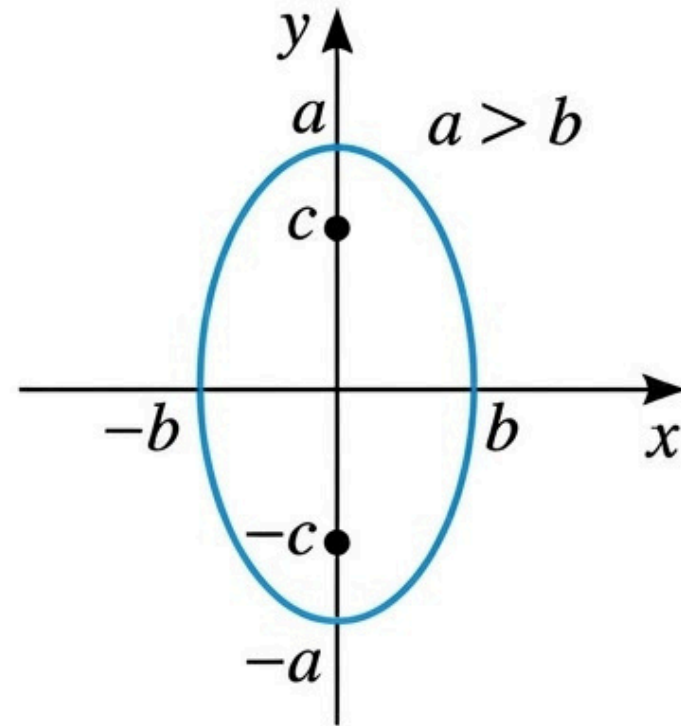
Elipses

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



Focos $(\pm c, 0)$, $c^2 = a^2 - b^2$

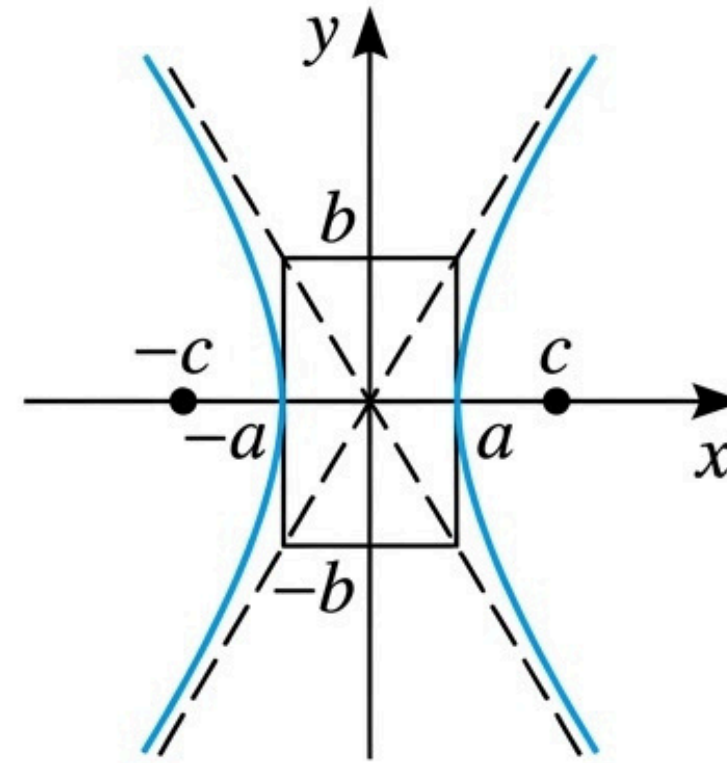
$$\frac{x^2}{b^2} + \frac{y^2}{a^2} = 1$$



Focos $(0, \pm c)$, $c^2 = a^2 - b^2$

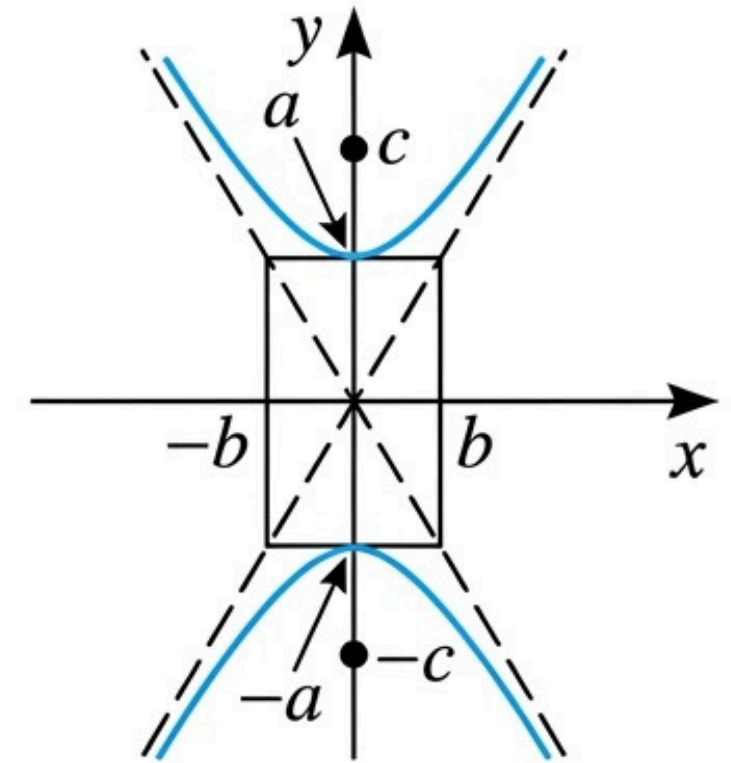
Hipérbolas

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



Focos $(\pm c, 0)$, $c^2 = a^2 + b^2$

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



Focos $(0, \pm c)$, $c^2 = a^2 + b^2$

Contáctanos

 @pamautp

 pama@utp.edu.co