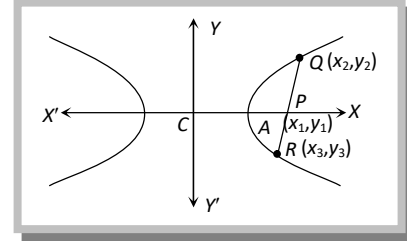


Equation of the Chord of the Hyperbola whose Midpoint (x_1, y_1) is given.

Equation of the chord of the hyperbola $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$, bisected at the given

$$\text{point } (x_1, y_1) \text{ is } \frac{xx_1}{a^2} - \frac{yy_1}{b^2} - 1 = \frac{x_1^2}{a^2} - \frac{y_1^2}{b^2} - 1$$

i.e., $T = S_1$



Note: The length of chord cut off by hyperbola $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$ from the line $y = mx + c$ is

$$\frac{2ab\sqrt{[c^2 - (a^2m^2 - b^2)](1 + m^2)}}{(b^2 - a^2m^2)}$$