

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

$$\frac{dy}{dx} = \frac{y'(t)}{x'(t)}$$

tangente horizontal:

$$y'(t) = 0$$

$$x'(t) \neq 0$$

l'Hopital si $\frac{0}{0}$

tangente vertical:

$$x'(t) = 0$$

$$y'(t) \neq 0$$

$$\frac{d^2y}{dx^2} = \frac{\frac{d}{dt} \left(\frac{dy}{dx} \right)}{x'(t)}$$

$$\frac{f(x)}{g(x)} = \frac{f'(x)g(x) - f(x)g'(x)}{(g(x))^2}$$

$$\text{Área} = \int_{t_1}^{t_2} y \underbrace{dx}_{\text{derivada } x}$$

$$L = \int_a^b \sqrt{(r')^2 + r^2} d\theta$$

POLAR

POLARES

$$x = r \cos \theta$$

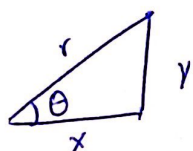
$$y = r \sin \theta$$

$$A = \int_{t_1}^{t_2} \frac{1}{2} r^2 d\theta$$

$$A = \frac{1}{2} \int_a^b \underbrace{r_1^2 - r_2^2}_{\text{alejado del origen}} d\theta$$

$$A = \int_{t_1}^{t_2} g(t) f'(t) dt$$

$$L_f = \int_a^b \sqrt{(x'(t))^2 + (y'(t))^2} dt$$



$$S \frac{Q}{K} \left(\frac{A}{H} T \frac{Q}{A} \right)$$