$$\boxed{y - y_1 = m(x - x_1)}$$

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

---

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

$x = r\cos\theta$

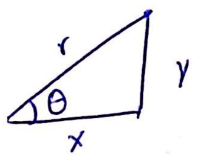
$y = r\sin\theta$

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

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

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

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



$S\frac{O}{H}\ C\frac{A}{H}\ T\frac{O}{A}$