

### CÁLCULO DE THOMAS: Sección 3: Derivadas

Ejercicio de la parte 3.6 definición de derivadas

35.

$$\begin{aligned} f(\theta) &= \left( \frac{\sin \theta}{1 + \cos \theta} \right)^2 \\ \Rightarrow f'(\theta) &= 2 \left( \frac{\sin \theta}{1 + \cos \theta} \right) \cdot \frac{d}{d\theta} \left( \frac{\sin \theta}{1 + \cos \theta} \right) = \\ &= \frac{2 \sin \theta}{1 + \cos \theta} \cdot \frac{(1 + \cos \theta)(\cos \theta) - (\sin \theta)(-\sin \theta)}{(1 + \cos \theta)^2} \\ &= \frac{(2 \sin \theta)(\cos \theta + \cos^2 \theta + \sin^2 \theta)}{(1 + \cos \theta)^3} \\ &= \frac{(2 \sin \theta)(\cos \theta + 1)}{(1 + \cos \theta)^3} \\ &= \frac{2 \sin \theta}{(1 + \cos \theta)^2} \end{aligned}$$

<https://docs.google.com/document/d/17wnkJwYSe8k76oywKrBS3MkXJdX0EDerEwM-Tm-DI/ts/edit>