

4) Calcular las derivadas de las siguientes funciones:

$$a) f(x) = (33 - 2x)^{4/3} \Rightarrow f'(x) = \frac{4}{3} (33 - 2x)^{1/3}$$

$$b) f(x) = e^{2x} \Rightarrow f'(x) = e^{2x} \cdot 2 = 2e^{2x}$$

$$c) f(x) = 2^x \Rightarrow f'(x) = 2^x \ln(2)$$

$$d) f(x) = \ln|7 - x| \Rightarrow f'(x) = \frac{1}{7 - x} \cdot (-1) = \frac{-1}{7 - x}$$

$$e) f(x) = \ln|x^2 + 3x + 4| \Rightarrow f'(x) = \frac{2x + 3}{x^2 + 3x + 4}$$

$$f) f(x) = \ln|e^x + e^{-x}| \Rightarrow f'(x) = \frac{e^x - e^{-x}}{e^x + e^{-x}}$$

$$g) f(x) = \ln|\cos(x) + \sin(x)| \Rightarrow \frac{\cos(x) - \sin(x)}{\cos(x) + \sin(x)}$$

$$h) f(x) = \frac{\cos(x)}{\sin(x)} \Rightarrow f'(x) = \frac{-\sin(x)\sin(x) - \cos(x)\cos(x)}{\sin^2(x)} = \frac{-\sin^2(x) - \cos^2(x)}{\sin^2(x)}$$

$$= -\csc(x)$$