

$$5. \quad y = \frac{e^{4x} - 2}{e^{4x} + 5} \quad \begin{matrix} P \\ Q \end{matrix} \quad \begin{matrix} P' = e^{4x} \cdot \frac{d}{dx}(4x) = 4e^{4x} \\ Q' = e^{4x} \cdot \frac{d}{dx}(4x) = 4e^{4x} \end{matrix}$$

$$\frac{P'Q - PQ'}{Q^2}$$

$$y' = \frac{4e^{4x}(e^{4x} + 5) - (e^{4x} - 2) \cdot 4e^{4x}}{(e^{4x} + 5)^2}$$

$$= \frac{4e^{4x}[e^{4x} + 5 - e^{4x} + 2]}{(e^{4x} + 5)^2}$$

$$y' = \frac{28e^{4x}}{(e^{4x} + 5)^2}$$

$$6. \quad y = e^{x/3} \quad \text{AT } (0, 1)$$

FIND SLOPE OF TANGENT LINE AT A POINT

① FIND DERIVATIVE

$$y' = e^{x/3} \cdot \frac{d}{dx} \left(\frac{x}{3} \right)$$

$$y' = \frac{1}{3} e^{x/3}$$

② PLUG IN X PART OF POINT AND CHANGE NOTATION TO m

$$m = \frac{1}{3} e^{0/3}$$

$$m = \frac{1}{3} e^0$$

$$m = \frac{1}{3} (1)$$

$$m = \frac{1}{3}$$