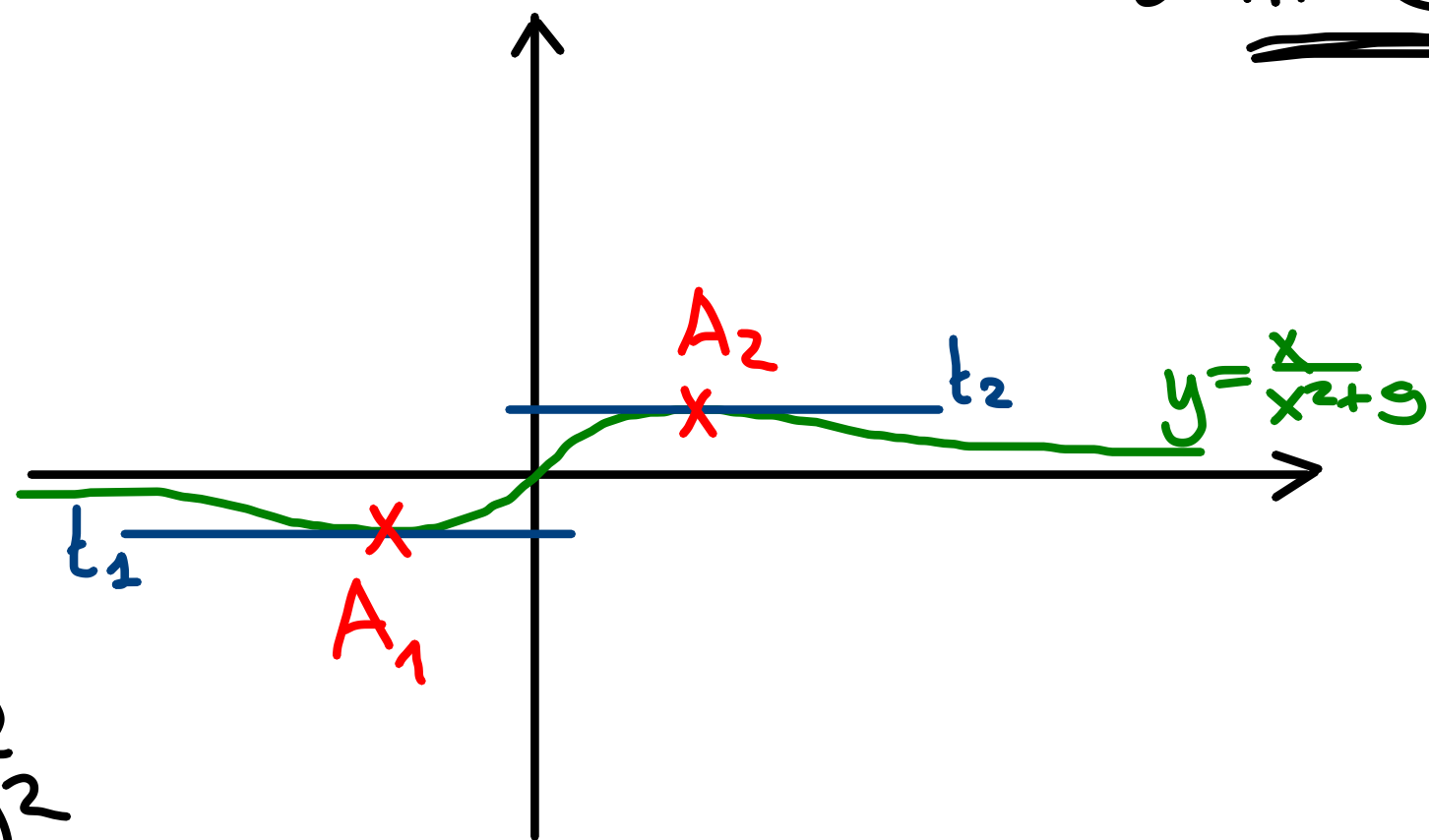


2.8.18 En quels points la courbe $y = \frac{x}{x^2 + 9}$ a-t-elle une tangente horizontale?

$\Rightarrow \underline{\underline{m=0}}$

$$f(x) = \frac{x}{x^2 + 9}$$

$$\begin{aligned} 1) \quad f'(x) &= \frac{1 \cdot (x^2 + 9) - x \cdot 2x}{(x^2 + 9)^2} \\ &= \frac{x^2 + 9 - 2x^2}{(x^2 + 9)^2} = \frac{-x^2 + 9}{(x^2 + 9)^2} \end{aligned}$$



$$\begin{aligned} \Rightarrow m = f'(a) = 0 &\Leftrightarrow \frac{-a^2 + 9}{(a^2 + 9)^2} = 0 &\Leftrightarrow -a^2 + 9 = 0 \\ &&\Leftrightarrow a^2 - 9 = 0 \\ &&\Leftrightarrow (a+3)(a-3) = 0 \\ &&\Leftrightarrow a = \pm 3 \end{aligned}$$

2) $A_1(-3; -\frac{1}{6})$ car $f(-3) = \frac{-3}{9+9} = -\frac{1}{6}$

$A_2(3; \frac{1}{6})$ $f(3) = \frac{3}{9+9} = \frac{1}{6}$