

$$f(x) = \frac{3x^3 + 1}{3x^3 - 1}$$

$$Z = 3x^3 + 1 \quad N = 3x^3 - 1$$

$$Z' = 9x^2 \quad N' = 9x^2$$

$$\begin{aligned} f'(x) &= \frac{9x^2 \cdot (3x^3 - 1) - (3x^3 + 1) \cdot 9x^2}{(3x^3 - 1)^2} \\ &= \frac{27x^5 - 9x^2 - 27x^5 - 9x^2}{(3x^3 - 1)^2} \\ &= \frac{-18x^2}{(3x^3 - 1)^2} \end{aligned}$$