

$$f(x) = \frac{x}{4x+1}$$

$$Z = x$$

$$N = 4x + 1$$

$$Z' = 1$$

$$N' = 4$$

$$\begin{aligned} f'(x) &= \frac{1 \cdot (4x+1) - x \cdot 4}{(4x+1)^2} \\ &= \frac{4x+1-4x}{(4x+1)^2} \\ &= \frac{1}{(4x+1)^2} \end{aligned}$$