$$\mathbf{y = \frac{12x - x^2 - 6}{x^2 + 3}}$$

$Z = 12x - x^2 - 6$ $\qquad$ $N = x^2 + 3$

$Z' = 12 - 2x$ $\qquad$ $N' = 2x$

$$y' = \frac{(12 - 2x) \cdot (x^2 + 3) - (12x - x^2 - 6) \cdot 2x}{(x^2 + 3)^2}$$

$$= \frac{12x^2 + 36 - 2x^3 - 6x - 24x^2 + 2x^3 + 12x}{(x^2 + 3)^2}$$

$$= \frac{-12x^2 + 6x + 36}{(x^2 + 3)^2}$$

$$= \frac{-6(2x^2 - x - 6)}{(x^2 + 3)^2}$$