$$y = \frac{1}{(x^2-1)(x^2+x+1)}$$

$$y' = \frac{\left(\frac{d}{dx}\right)(1)}{\left(\frac{d}{dx}\right)(x^2-1)(x^2+x+1)}$$

$$y' = \frac{d}{dx}\left(\frac{1}{x^4+x^3-x-1}\right)$$

$$y' = \frac{4x^3+3x^2-1}{(x^4+x^3-x-1)^2}$$