

Ex.  $\frac{x^2 \cdot (1-x^2)^{1/2}}{1}$

$$y' = 2x(1-x^2)^{1/2} + x^2 \left[ -2x \cdot \frac{1}{2} (1-x^2)^{-1/2} \right]$$

$$y' = 2x(1-x^2)^{1/2} - x^3(1-x^2)^{-1/2}$$

$$u = 1 - x^2$$

$$\frac{dy}{dx} = -2x$$

$$y = u^{1/2}$$
$$\frac{dy}{dx} = \frac{1}{2} u^{-1/2}$$

$$\text{Ex. } \left( \frac{3x-1}{x^2+3} \right)^2$$

$$u = \frac{3x-1}{x^2+3}$$

$$y = u^2$$

$$\frac{du}{dx} = \frac{-3x^2+2x+9}{(x^2+3)^2}$$

$$\frac{dy}{du} = 2u'$$

$$= 2 \left( \frac{3x-1}{x^2+3} \right) \left( \frac{-3x^2+2x+9}{(x^2+3)^2} \right)$$

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