

EX 2.8.10

$$b) f(x) = \frac{(1-x)^3}{(1+x)^2}$$

$$\left(\frac{u}{v}\right)' = \frac{u'v - uv'}{v^2}$$

$$u = (1-x)^3$$

$$v = (1+x)^2$$

$$u' = 3(1-x)^2 \cdot (-1)$$

$$v' = 2(1+x)^1 \cdot 1$$

$$= -3(1-x)^2$$

$$= 2(1+x)$$

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

$$= \frac{(1-x)^2(1+x) \left[ \overbrace{-3(1+x) - 2(1-x)}^{-3-3x-2+2x} \right]}{(1+x)^4}$$

$$= \frac{(1-x)^2(-x-5)}{(1+x)^3} = - \frac{(1-x)^2(x+5)}{(1+x)^3}$$