7. $\quad x + x^2 = 0 \iff x(1+x) = 0$

$$x = 0 \quad \text{ou} \quad x = -1 \quad \text{V.I.}$$

$$D = \mathbb{R} \setminus \{-1; 0\}$$

$f(x) = \dfrac{1}{V} \qquad V = x + x^2 \qquad V' = 1 + 2x$

$f'(x) = -\dfrac{V'}{V^2} = -\dfrac{1+2x}{(x+x^2)^2}$

8. $\quad D = \mathbb{R}$

$f(x) = (2x+1)^2 = 4x^2 + 4x + 1$

$f'(x) = 8x + 4$

$$\boxed{f(x) = u^n \quad \Rightarrow \quad f'(x) = n u^{n-1} u'}$$

$f(x) = u^2 \qquad u = 2x+1 \qquad u' = 2$

$f'(x) = 2uu' = 2(2x+1) \times 2 = 8x + 4$

9. $\quad D = \mathbb{R}$

$f(x) = uv \qquad\qquad u = x \quad u' = 1$

$$v = 5x - 3 \quad v' = 5$$

$f'(x) = u'v + uv' = 1(5x-3) + x \times 5 = 5x - 3 + 5x =$

$$= 10x - 3$$