Règles de dérivation (suite et fin)

5. $(u \circ v)' = (u(v))' = u'(v) \cdot \underbrace{v'}_{\text{dérivée interne}}$

en particulier :

$$\boxed{\left((u)^n\right)' = n\,u^{n-1} \cdot u'}$$

$$\boxed{\left(\sqrt{u}\right)' = \frac{1}{2\sqrt{u}} \cdot u' = \frac{u'}{2\sqrt{u}}}$$

exemples

a) $\left((2x^3+1)^4\right)' = 4(2x^3+1)^3 \cdot 6x^2$

$= 24x^2(2x^3+1)^3$

$u = 2x^3+1$

$u' = 6x^2$

b) $\left(\sqrt{5x^2+2x+5}\right)' = \frac{10x+2}{2\sqrt{5x^2+2x+5}}$

$u = 5x^2+2x+5$

$u' = 10x+2$

$= \frac{\cancel{2}(5x+1)}{\cancel{2}\sqrt{5x^2+2x+5}} = \frac{5x+1}{\sqrt{5x^2+2x+5}}$

ex 2.8.10 a) b) c) d)

2.8.11 d) e)