LES PUISSANCES

$a^n * a^m = a^{n+m}$

$a^n * b^n = (a * b)^n$

$(a^n)^m = a^{n*m}$

$\dfrac{1}{a^n} = a^{-n}$

$\left(\dfrac{a}{b}\right)^n = \dfrac{a^n}{b^n}$

$\dfrac{a^n}{a^m} = a^{n-m}$

$\sqrt[n]{a} = a^{\left(\frac{1}{n}\right)}$

EXPONENTIELLE ET LOGARITHME NÉPÉRIEN

$e^0 = 1$

$(e^n)^m = e^{n*m}$

$e^n * e^m = e^{n+m}$

$e^n * a^n = (a\,e)^n$

$\dfrac{e^n}{e^m} = e^{n-m} \quad \Longrightarrow \quad \dfrac{1}{e^n} = e^{-n}$

$(e^{f(x)})' = f'(x)\,e^{f(x)}$

$\ln(1) = 0$

$\ln\left(\dfrac{a}{b}\right) = \ln(a) - \ln(b) \quad \Longrightarrow \quad \ln\left(\dfrac{1}{a}\right) = \ln(1) - \ln(a) = -\ln(a)$

$\ln(a * b) = \ln(a) + \ln(b) \quad \Longrightarrow \quad \ln(a^n) = n\ln(a)$

$(\ln(f(x)))' = \dfrac{f'(x)}{f(x)}$

$\ln(e^a) = e^{\ln(a)} = a$