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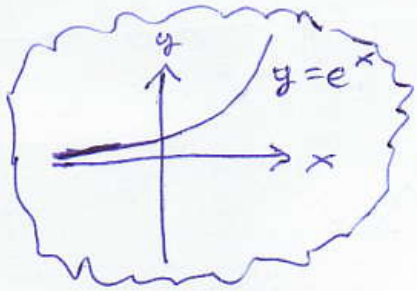
Standard parts for exponentials & logarithms

Assume $0 < \varepsilon \approx 0$ & $0 < H$ & H infinite & b positive non-infinitesimal & b finite.

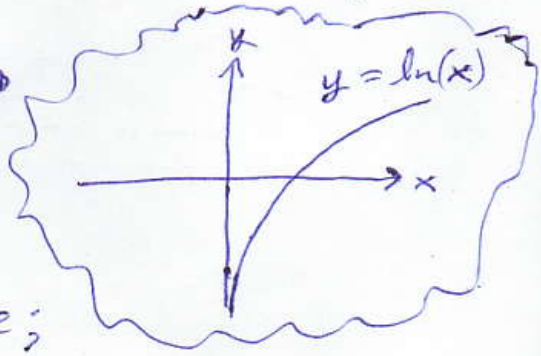
$$st(e^{\pm b}) = e^{\pm st(b)};$$

$$st(\ln(b)) = \ln(st(b));$$



e^{H} is positive infinite; $e^{-H} \approx 0$;

$\ln(H)$ is positive infinite;



$e^{\pm\varepsilon} \approx e^{0} = 1$;

$\ln(\varepsilon)$ is negative infinite;

Conversion formulae: $\begin{cases} x^{y} = e^{(\ln(x)) \cdot y)} \\ \log_y(x) = \dfrac{\ln(x)}{\ln(y)} \end{cases}$

$0 < x < 1 \Rightarrow \ln(x) < 0$

$x = 1 \Rightarrow \ln(x) = 0$

$1 < x \Rightarrow \ln(x) > 0$

$\ln x$ is only defined for $x > 0$.

$\ln(e^{x}) = x$ | $e^{\ln y} = y$