FAR BEYOND

MAT122

Exponential Derivatives other than base *e*

Stony Brook University

Exponential Derivatives other than e^x

know $\boxed{\frac{d}{dx}e^x = e^x}$ but what is $\frac{d}{dx}a^x$?

$$\boxed{\frac{d}{dx}a^x = a^x \ln a}$$

ex. if $f(x) = 2^x$ then $f'(x) = \boxed{2^x \ln 2}$

note: if $f(x) = e^x$ then $f'(x) = e^x \ln e$

$\ln e = 1$

$= \boxed{e^x}$