



derivative

Examples Random

Assuming "derivative" refers to a computation | Use as a general topic or referring to a mathematical definition or a word instead

function to differentiate:

Also include:

Derivative:

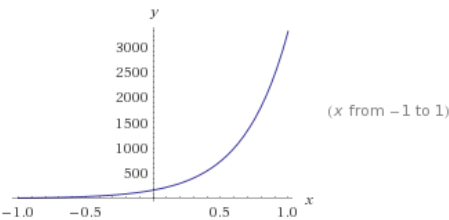
Approximate form

Step-by-step solution

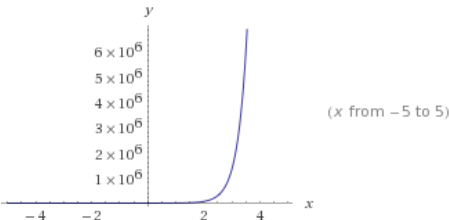
$$\frac{d}{dx}(e^{3x+4}) = 3e^{3x+4}$$

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Plots:



Enable interactivity



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Roots:

Step-by-step solution

(no roots exist)

Properties as a real function:

Domain:

$\mathbb{R}$  (all real numbers)

Range:

$\{y \in \mathbb{R} : y > 0\}$  (all positive real numbers)

Injectivity:

**injective** (one-to-one) on its domain

$\mathbb{R}$  is the set of real numbers

Periodicity:

Approximate form

periodic in  $x$  with period  $\frac{2i\pi}{3}$

Series expansion at  $x=0$ :

$$3e^4 + 9e^4x + \frac{27e^4x^2}{2} + \frac{27e^4x^3}{2} + \frac{81e^4x^4}{8} + O(x^5)$$

(Taylor series)

Big-O notation »

$$\int 3 e^{4+3 x} d x=e^{3 x+4}+\text { constant}$$

Limit:

$$\lim _{x \rightarrow-\infty} 3 e^{4+3 x}=0$$

Definite integral over a half-period:

More digits

$$\int_0^{\frac{i \pi}{3}} 3 e^{4+3 x} d x=-2 e^4 \approx-109.196$$

Differential geometric curves:

(requires interactivity)

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Inverse iterations:

(requires interactivity)

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Related Queries:

- |  |  |
|--|--|
| <div>= series of <math>e^{(3 x+4)}</math> at <math>x=0</math></div>      | <div>= limit of <math>(e^{(3 (eps+x)+4)}/e^{(3 x+4)})^{(1/e...}</math></div> |
| <div>= polar plot <math>\text{abs}(e^{(3 \text{ theta}+4)})</math></div> | <div>= <math>d^2/dx^2 (e^{(3 x+4)})</math></div>                             |