

Balance chemical reactions like a pro.

Unlock Step-by-Step



 $d(\ln((1/(\sigma^* \operatorname{sqrt}(2\pi)))((e^*(-(x1-\mu)^2/(2\sigma^2))))))))$







1 Upload

Examples

Random

Derivative:

$$\frac{\partial}{\partial \sigma} \left(\log \left(\frac{e^{-(x1-\mu)^2/(2\sigma^2)}}{\sigma \sqrt{2\pi}} \right) \right) = \frac{\mu^2 - \sigma^2 + x1^2 - 2\mu x1}{\sigma^3}$$

log(x) is the natural logarithm

Solutions:

✓ Step-by-step solution

$$x1 = \frac{1}{2}\sigma^3 \left(\frac{2\mu}{\sigma^3} \pm \sqrt{\frac{4\mu^2}{\sigma^6} - \frac{4\left(\frac{\mu^2}{\sigma^3} - \frac{1}{\sigma}\right)}{\sigma^3}} \right) \left(\frac{1}{\sigma} \neq 0 \right)$$

Alternate forms:

More

$$-\frac{\left(-\mu+\sigma+x1\right)\left(\mu+\sigma-x1\right)}{\sigma^{3}}$$

$$\frac{\left(x1-\mu\right)^2-\sigma^2}{\sigma^3}$$

$$\frac{\mu^2 - \sigma^2 + x1(x1 - 2\mu)}{\sigma^3}$$

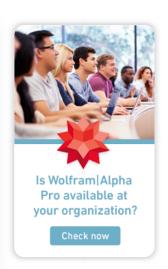
Expanded form:

$$\frac{\mu^2}{\sigma^3} - \frac{1}{\sigma} + \frac{x1^2}{\sigma^3} - \frac{2 \mu x1}{\sigma^3}$$

Property as a function:

Parity

odd



Indefinite integral:

Step-by-step solution

$$\int \frac{{{\bf x}{\bf 1}^2} - 2\,{{\bf x}}{\bf 1}\,\mu + {\mu ^2} - {\sigma ^2}}{{\sigma ^3}}\,d{\bf x}{\bf 1} = \frac{{\frac{{{\bf x}{\bf 1}^3}}{3}} - \mu\,{{\bf x}}{\bf 1}^2 + {\mu ^2}\,{{\bf x}}{\bf 1} - {\sigma ^2}\,{{\bf x}}{\bf 1}}{{\sigma ^3}} + {\rm constant}$$

Limit:

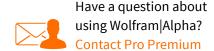
$$\lim_{\sigma \to \pm \infty} \frac{x1^2 - 2x1 \,\mu + \mu^2 - \sigma^2}{\sigma^3} = 0$$

Download Page

POWERED BY THE WOLFRAM LANGUAGE

Related Queries:

- = integrate $log(e^{-(x1 ...)} = series of log(e^{-(x1 ...)})$
- = $d^3/dsigma^3 (log(e^*... = series (f(x+eps)/f(x))...$
- = Felix Hausdorff



Give us your

Pro Web Apps Mobile Apps Products Business Solutions API & Developer Solutions

Terms Privacy



WOLFRAM wolfram.com Wolfram Language Mathematica Wolfram Demonstrations Wolfram for Education

MathWorld