

differentiation $y^3 + x y^2 = x^2 - 5$



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Input interpretation:

differentiate

$$y^3 + x y^2 = x^2 - 5$$

with respect to

x

Open code 

Result:

Step-by-step solution


$$y'(x) = \frac{2x - y^2}{2xy + 3y^2}$$



d/dx sqrt(5-sqrt(x))



 Web Apps

 Examples

 Random

Derivative:

Step-by-step solution

$$\frac{d}{dx} \left(\sqrt{5 - \sqrt{x}} \right) = -\frac{1}{4 \sqrt{5 - \sqrt{x}} \sqrt{x}}$$

Open code 

$d/dx [(4^x+1)^{(x^3+x)}]$



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Derivative:

Approximate form

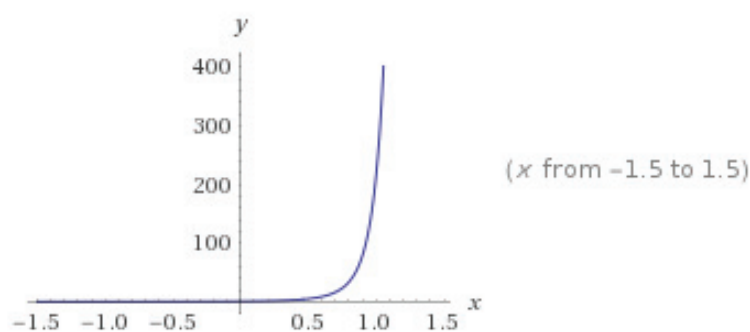
Step-by-step solution

$$\frac{d}{dx} \left((4^x + 1)^{x^3+x} \right) = (4^x + 1)^{x^3+x} \left(\frac{4^x (x^3 + x) \log(4)}{4^x + 1} + (3x^2 + 1) \log(4^x + 1) \right)$$



$\log(x)$ is the natural logarithm

Plots:



integrate (3*x-2)*Abs(x) {x,-1,2}



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Definite integral:

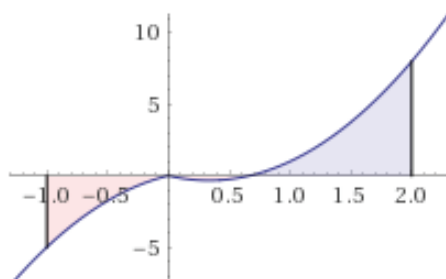
Step-by-step solution

$$\int_{-1}^2 (3x - 2)|x| dx = 2$$

[Open code](#) 

$|z|$ is the absolute value of z

Visual representation of the integral:



integrate $x^{14}(x^5+1)^{1/3}$



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Assuming the principal root | Use [the real-valued root](#) instead

Indefinite integral:

Step-by-step solution

$$\int x^{14} \sqrt[3]{x^5 + 1} dx = \frac{3}{700} (x^5 + 1)^{4/3} (14x^{10} - 12x^5 + 9) + \text{constant}$$

Open code 

integrate $x^{14}(x^5+1)^{1/3}$ {x,0,1}



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Assuming the principal root | Use [the real-valued root](#) instead

Definite integral:

[More digits](#)

[Step-by-step solution](#)

$$\int_0^1 x^{14} \sqrt[3]{x^5 + 1} dx = \frac{3}{700} \left(22 \sqrt[3]{2} - 9 \right) \approx 0.080221$$

[Open code](#) 

integrate (x^3*(1+2*ln(x))*ln(x))/((3+x^2*ln(x))^2)



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Indefinite integral:

Step-by-step solution

$$\int \frac{x^3 (1 + 2 \log(x)) \log(x)}{(3 + x^2 \log(x))^2} dx = \log(x^2 \log(x) + 3) + \frac{3}{x^2 \log(x) + 3} + \text{constant}$$



log(x) is the natural logarithm

lim tan(2*x^2+x-1)/(x^2-1) x->-1



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Input:

$$\lim_{x \rightarrow -1} \frac{\tan(2x^2 + x - 1)}{x^2 - 1}$$

Open code

Result:

$$\frac{3}{2} = 1.5$$

Limit:

Decimal form

Step-by-step solution

$$\lim_{x \rightarrow -1} \frac{\tan(2x^2 + x - 1)}{x^2 - 1} = \frac{3}{2}$$



differentiate arccot(x+y^2)+3*ln(y)=Pi/4|



 Web Apps
  Examples
  Random

Input interpretation:

differentiate

$$\cot^{-1}(x + y^2) + 3 \log(y) = \frac{\pi}{4}$$

with respect to

x

Open code 

$\cot^{-1}(x)$ is the inverse cotangent function
 $\log(x)$ is the natural logarithm

Result:

Step-by-step solution

$$y'(x) = \frac{y}{3(x^2 + 1) + (6x - 2)y^2 + 3y^4}$$



Alternate forms:

$$y'(x) = \frac{y}{3(x + y^2)^2 - 2y^2 + 3}$$

