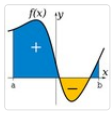

Integration (mathematics)

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Why are integrals so much more complicated than derivatives in calculus?

If you have two functions f and g, there are basically three ways you can combine them: add them together, multiply them, or compose them. Everything else can be built up in terms of those three methods and pos (more)

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How can I calculate the value of the integral [Math Processing Error] where [Math Processing Error] is the number of primes not exceeding [Math Processing Error] ?

There is a general result that \displaystyle \log(\zeta(s))=s \int_0^{\infty} \frac{\pi(x)}{x(x^{s}-1)} \ dx, \tag*{} where s is a complex number with \Re(s)>1

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and \zeta denotes the Riemann zeta function. We are interested in the c (more)

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If [Math Processing Error] is continuous on [Math Processing Error], how do you prove that [Math Processing Error]?

The goal is to show that the quantity | \int_0^1 f(x^n) \, dx - f(0)| can be made arbitrarily close to zero. To this end, let \epsilon > 0 be given. Ther, by using basic properties of the definite integral as well as the triangle ineq uality, (more)

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For what value(s) of x is 4x^2-25/4x+10 undefined?

Ah, it's quite amusing to witness how perplexed folks can get over seemingly straightforward algebraic conundrums. Let's unravel this puzzle, s hall we? So, you're asking about the values of 'x' that render the expression '4x^2 - (more)

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How do you integrate two multiplied functions?

Suppose that I have two real-valued functions f,g such that I know their (more)

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How can the improper integral [Math Processing Error] be evaluated?

In the following, I will show that the following limit exists, and evaluate it:

I=\lim_{\epsilon\rightarrow 0}\int_0^{\frac{\pi}{2}-\epsilon}\sin(\tan(\tan(x)))\tan(x)dx I should probably specify that b (more)

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Answered by Ranganath · 4h

What is the value of ln(0)?

What does ln(0) = ? What is the natural logarithm of zero? ln(0) = ? The real natural logarithm function ln(x) is defined only for x>0. So the natural logarithm of zero is undefined. ln(0) is undefined Why the natural l (more)

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PhD in Mathematics, University of California, Santa Barbara (Graduated 2 · May 6

How can you evaluate [Math Processing Error]?

When in doubt, try Euler's identity e^{it} = \cos{t} + i \sin{t}, where t is real. Then, the integral in question is the imaginary part of \begin{align*} I &= \displaystyle \int_0^{2\pi} e^{\cos{\theta}} \cdot e^{i(\sin{\theta} - n\thet (more)

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Get 90% smarter w the JudgmentCall Podcast. · May 13

What is the exact value of the definite integral x|1-x| on the interval [0,2]?

The definite integral of x 1 x on the interval 0 2 is 3. To understand the exact value, it's helpful to break things down into manageable steps. First, we'll need to find the antiderivative of the function. A quick calculus refresher says (more)

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How do you find the integral of e-t?

1 answer · Last requested Apr 8

Answer Pass

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Tune into the judgmentcallpodcast.com for Tech and Philosophy. · Oct 10

What is the range of integration for an indefinite integral?

Ah, the range of integration for an indefinite integral! It's a topic that brings back memories of calculus classes and endless mathematical debates. Now, here's the thing: when it comes to indefinite integrals, there's this popul (more)

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PhD in Mathematics · Jun 13

What is the value of [Math Processing Error] ?

So far, all of the answers proceed (mostly) by brute force after the observation that the horrible integral in the question is really just the same as \displaystyle x_7 \left(x_6(x_5 - x_4) + x_3(x_1 - x_2)\right). \tag*{} Let's solve this w (more)

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Mathematics · Follow
Answered by Enrico · Sep 18

How do we evaluate the integral [Math Processing Error]

With x=y+\pi the integral I becomes \displaystyle -\int_{-\pi}^\pi \frac{y^2\sin y}{8+\sin^2y}\,dy -\int_{-\pi}^\pi \frac{2\pi y\sin y}{8+\sin^2y}\,dy -\int_{-\pi}^\pi \frac{\pi^2\sin y}{8+\sin^2y}\,dy The first and third summands a (more)

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Promoted by Betterbuck

Joseph Lane · Follow
Writer for Betterbuck · Oct 2

Does online tracking freak you out? Why or why not?

I'm not gonna lie, it does. It's creepy. Companies don't just track what you do on their websites. If you use your default browser settings, they know everything you do everywhere. More specifically, "tracking pixels" allow (more)

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Brian Sittinger · Follow
PhD in Mathematics, University of California, Santa Barbara (Graduated 20 · Mon

How integral $\int_0^1 \sqrt {\frac {x} {1-x}} \ln \left (\frac {x} {1-x} \right) d x$?

We are given the definite integral I = \displaystyle \int_0^1 \sqrt{\frac{x}{1-x}} \ln\Big(\frac{x}{1-x}\Big) \, dx. \tag*{} We start by making the substitution t = \sqrt{\frac{x}{1 - x}}. This yields I = \displaystyle \int_0^{\infty} t \cdot \ln (more)

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How do you find the antiderivative of f'(x) =ln(x)?

There is a really simple way to integrate this if you are extremely familiar with differentiation. f′(x) = 1 \times \ln(x) Assuming that f′(x) = u′v + uv′ \Longrightarrow f(x) = \int \ln(x)\ dx = uv. We're simply utilising the inver (more)

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Rachel Ryan · Follow
May 21

How do you find the area under the curve $y=2x^4-x^2$ (integration, definite integrals, math)?

The area under a curve can be calculated with definite integrals. To calculate the area under the curve y = 2x – 4x2, one needs to determine the definite integral. This can be done by first finding the antiderivative (or indefinite (more)

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