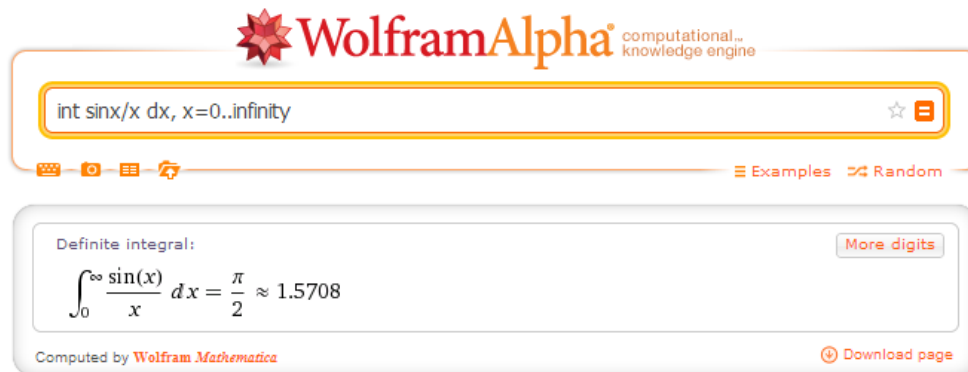


Cálculo 2:

Para Cálculo 2, o WolframAlpha (<http://www.wolframalpha.com>) calcula:

Integral imprópria:

$\int_0^{\infty} \frac{\sin x}{x} dx$, $x=0..infinity$



WolframAlpha computational knowledge engine

int sinx/x dx, x=0..infinity

Definite integral:

$$\int_0^{\infty} \frac{\sin(x)}{x} dx = \frac{\pi}{2} \approx 1.5708$$

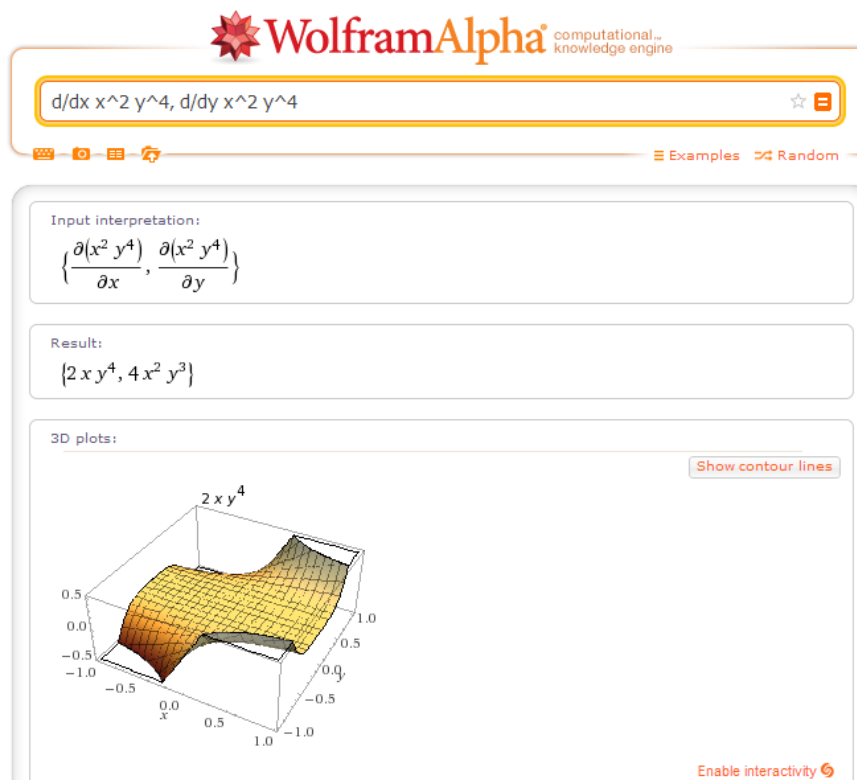
Computed by Wolfram Mathematica

More digits

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Derivada parcial:

$\frac{d}{dx} x^2 y^4$, $\frac{d}{dy} x^2 y^4$



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$\frac{d}{dx} x^2 y^4$, $\frac{d}{dy} x^2 y^4$

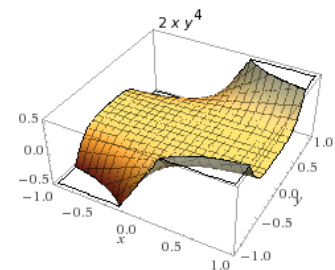
Input interpretation:

$$\left\{ \frac{\partial(x^2 y^4)}{\partial x}, \frac{\partial(x^2 y^4)}{\partial y} \right\}$$

Result:

$$\{2 x y^4, 4 x^2 y^3\}$$

3D plots:



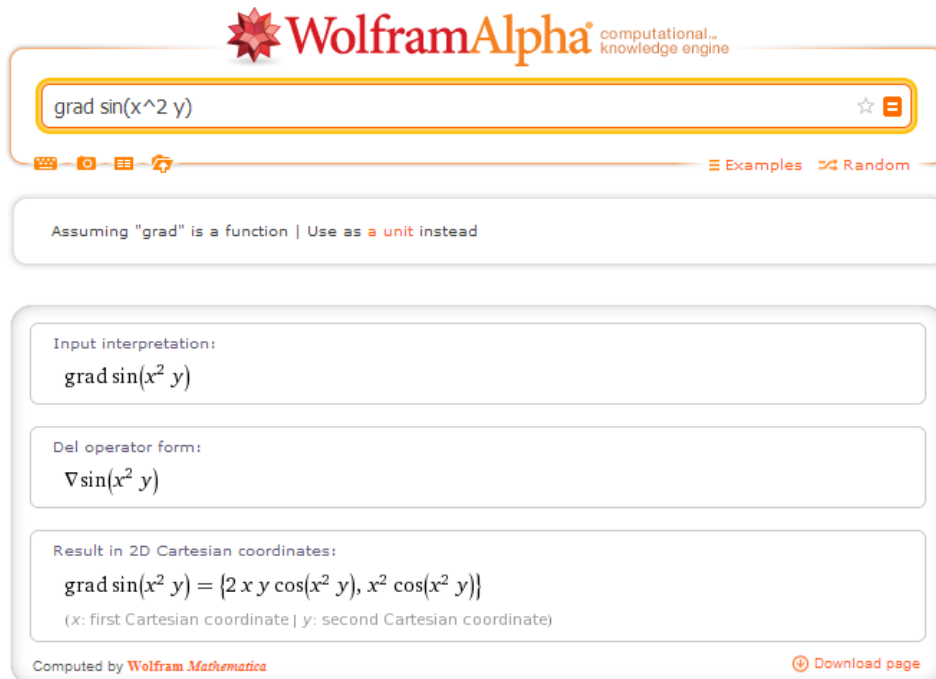
Show contour lines

Enable interactivity

Veja página completa [aqui](#).

Vetor gradiente:

$$\text{grad sin}(x^2 y)$$



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grad sin(x² y)

Assuming "grad" is a function | Use as a unit instead

Input interpretation:
grad sin(x² y)

Del operator form:
 $\nabla \sin(x^2 y)$

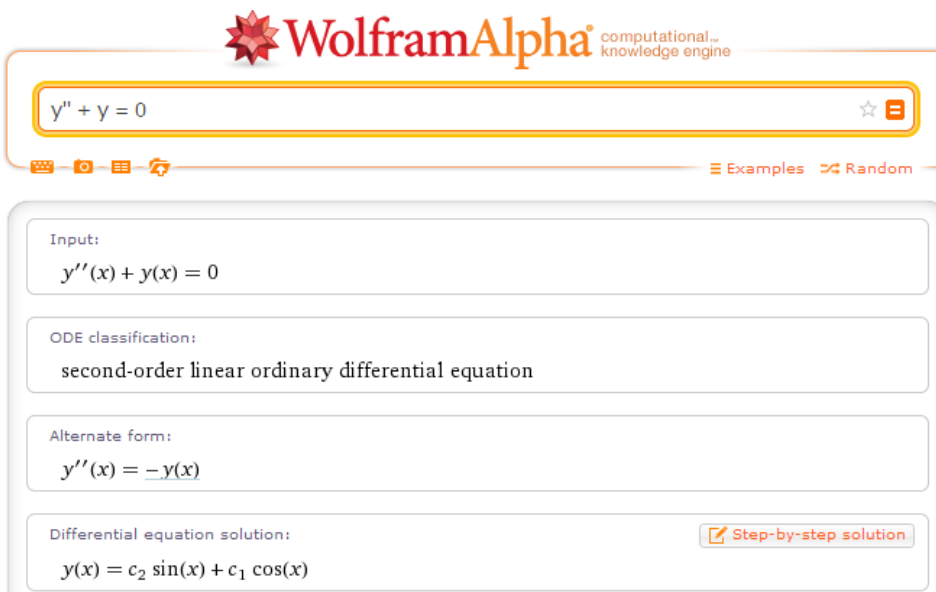
Result in 2D Cartesian coordinates:
 $\text{grad sin}(x^2 y) = \{2 x y \cos(x^2 y), x^2 \cos(x^2 y)\}$
(x: first Cartesian coordinate | y: second Cartesian coordinate)

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Equações diferenciais:

Exemplos: $y'' + y = 0$



WolframAlpha computational knowledge engine

$y'' + y = 0$

Input:
 $y''(x) + y(x) = 0$

ODE classification:
second-order linear ordinary differential equation

Alternate form:
 $y''(x) = -y(x)$

Differential equation solution:
 $y(x) = c_2 \sin(x) + c_1 \cos(x)$

Step-by-step solution

$$dy/dx=x^2/y^2$$



$$dy/dx=x^2/y^2$$



Examples Random

Input interpretation:

$$\frac{\partial y(x)}{\partial x} = \frac{x^2}{y(x)^2}$$

ODE classification:

first-order nonlinear ordinary differential equation

Differential equation solutions:

Approximate form

Step-by-step solution

$$y(x) = \sqrt[3]{c_1 + x^3}$$

$$y(x) = -\sqrt[3]{-1} \sqrt[3]{c_1 + x^3}$$

$$y(x) = (-1)^{2/3} \sqrt[3]{c_1 + x^3}$$

$$(y^2+1)xdx+(x+1)ydy=0$$



$$(y^2+1)xdx+(x+1)ydy=0$$



Examples Random

Input:

$$((y^2 + 1) x) dx + ((x + 1) y) dy = 0$$

ODE classification:

first-order nonlinear ordinary differential equation

Differential equation solutions:

Approximate form

Step-by-step solution

$$y(x) = -e^{-x} \sqrt{e^{2c_1} x^2 + 2 e^{2c_1} x + e^{2c_1} - e^{2x}}$$

$$y(x) = e^{-x} \sqrt{e^{2c_1} x^2 + 2 e^{2c_1} x + e^{2c_1} - e^{2x}}$$