


[Web Apps](#) [Examples](#) [Random](#)

Input interpretation:

differentiate

$$x^2 + x y - 3 x y^2 + y^3 + 1 = 0$$

with respect to

x

[Open code](#)

Result:

[Step-by-step solution](#)

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



Alternate forms:

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



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

Expanded form:

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




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Input interpretation:

differentiate

$$x \sin(x) + y^2 \tan^{-1}(1+x) = 3$$

with respect to

x

[Open code](#)
 $\tan^{-1}(x)$  is the inverse tangent function

Result:

[Step-by-step solution](#)

$$y'(x) = -\frac{\frac{y^2}{x^2+2x+2} + \sin(x) + x \cos(x)}{2y \tan^{-1}(x+1)}$$



Alternate forms:

[More](#)

$$y'(x) = -\frac{\frac{y^2}{(x+1)^2+1} + \sin(x) + x \cos(x)}{2y \tan^{-1}(x+1)}$$



$$y'(x) = -\frac{(x^2 + 2x + 2) \sin(x) + (x^3 + 2x^2 + 2x) \cos(x) + y^2}{2(x + (1 - i))(x + (1 + i))y \tan^{-1}(x+1)}$$



$$y'(x) = -\frac{x^3 \cos(x) + x^2 \sin(x) + 2x^2 \cos(x) + 2x \sin(x) + 2 \sin(x) + 2x \cos(x) + y^2}{2(x^2 + 2x + 2)y \tan^{-1}(x+1)}$$



implicit differentiation  $(x \sin(y))^{1/2} + y^{1/2} = 1$ 


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Input interpretation:

differentiate


$$\sqrt{x \sin(y)} + \sqrt{y} = 1$$

with respect to


 $x$ 
 Open code 


Result:

 Step-by-step solution 

$$y'(x) = -\frac{\sqrt{y} \sin(y)}{\sqrt{x \sin(y)} + x \sqrt{y} \cos(y)}$$


Alternate forms:

$$y'(x) = -\frac{2 \sqrt{y} \sin\left(\frac{y}{2}\right) \cos\left(\frac{y}{2}\right)}{\sqrt{x \sin(y)} + x \sqrt{y} \cos(y)}$$


$$y'(x) = -\frac{i(e^{-iy} - e^{iy}) \sqrt{y}}{2 \left( \frac{1}{2} x (e^{-iy} + e^{iy}) \sqrt{y} + \frac{\sqrt{i x (e^{-iy} - e^{iy})}}{\sqrt{2}} \right)}$$




plot  $y=x^3-6x^2+9x$



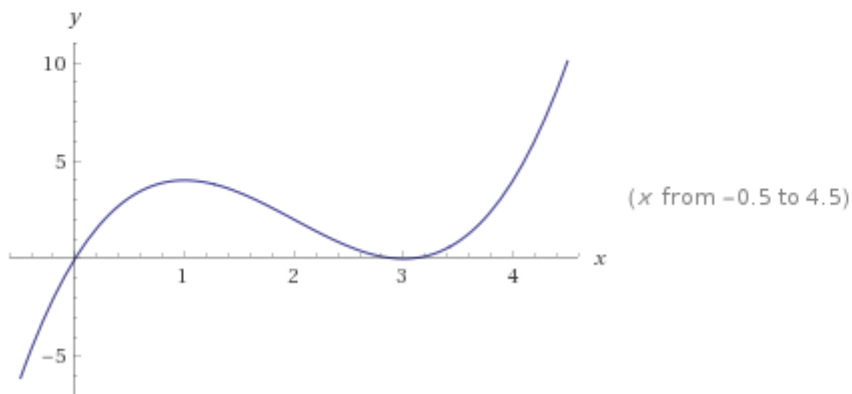
Web Apps Examples Random

Input interpretation:

plot

$$y = x^3 - 6x^2 + 9x$$

Plots:



Open code

plot  $y=3x^4+4x^3-12x^2$



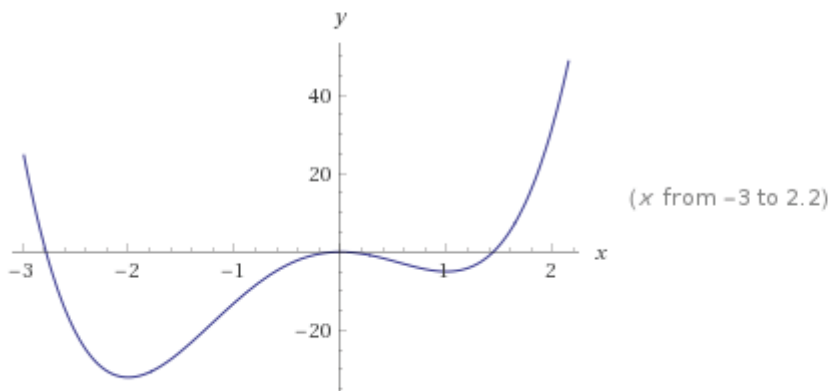
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Input interpretation:

plot

$$y = 3x^4 + 4x^3 - 12x^2$$

Plots:



Open code 

plot  $y=|x+1|*|x-2|$



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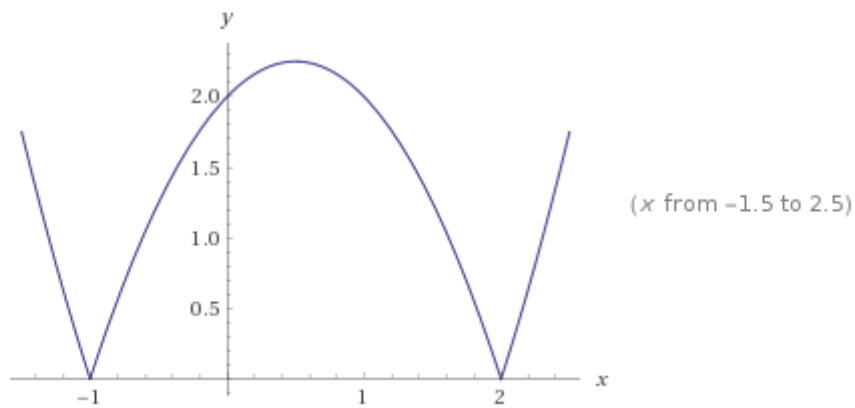
Input interpretation:

plot

$$y = |x + 1| |x - 2|$$


$|z|$  is the absolute value of  $z$

Plots:



plot  $y=x*(x^2+1)^{(1/2)}$



 Web Apps  Examples  Random

Input interpretation:

plot

$$y = x \sqrt{x^2 + 1}$$

Plots:

