1.2 page 84

WolframAlpha computational knowledge engine.

d/dx (x^2+1)^(1/2)

Web Apps Examples Random

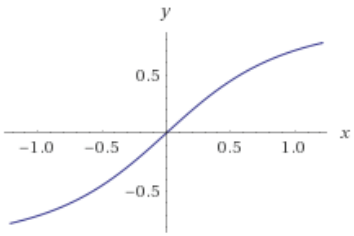
Derivative:

Step-by-step solution

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

Open code

Plots:



(x from −1.2 to 1.2)

1.1 page 84

(d^2/dx^2) (3*x^4-5*x^2+2)

Web Apps Examples Random

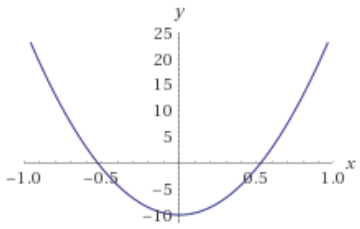
Derivative:

Step-by-step solution

$$\frac{d^2}{dx^2}(3x^4 - 5x^2 + 2) = 36x^2 - 10$$

Open code

Plots:



(x from −1 to 1)

(d^2/dx^2) (x^4+3*x^3+4*x^2+3*x+5)

Web Apps Examples Random

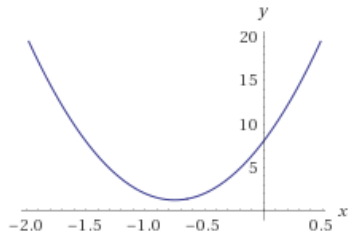
Derivative:

Step-by-step solution

$$\frac{d^2}{dx^2}(x^4+3x^3+4x^2+3x+5) = 2(6x^2+9x+4)$$

Open code

Plots:



(x from −2 to 0.5)

2 page 84

(d^3/dx^3) (x*(x-2)^(1/2))

Web Apps Examples Random

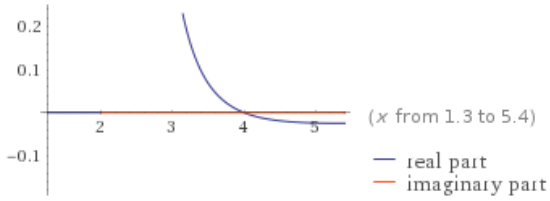
Derivative:

Step-by-step solution

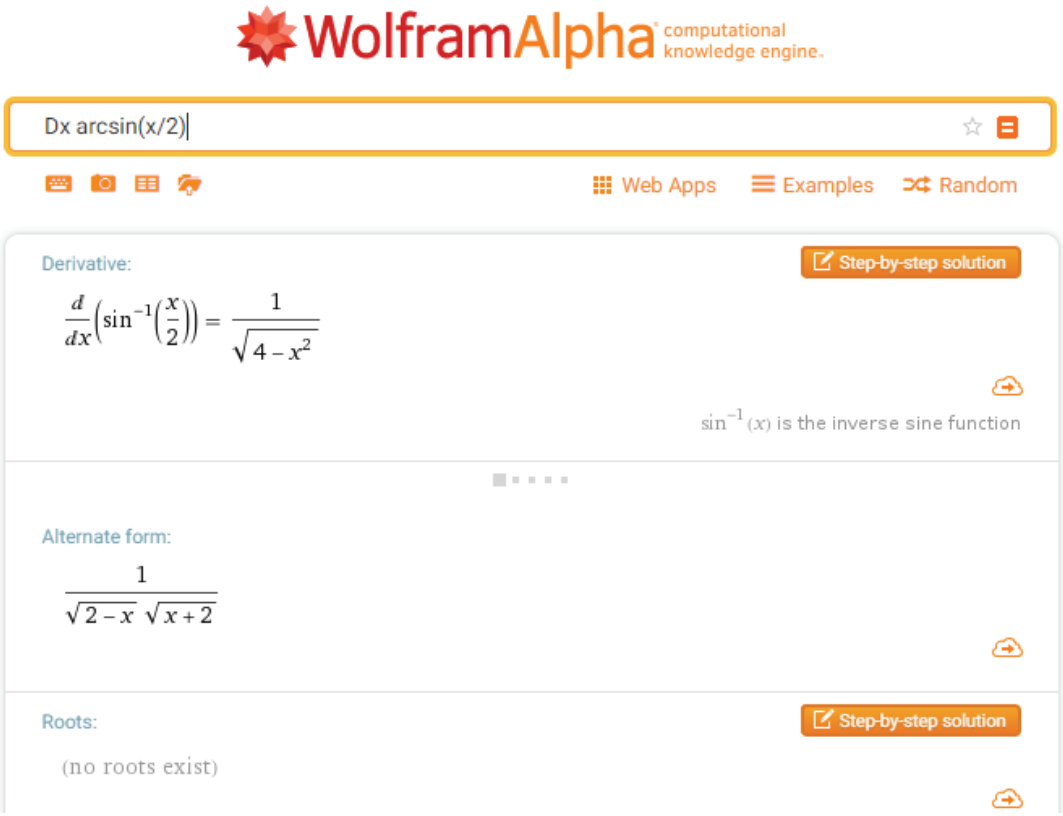
$$\frac{d^3}{dx^3}\left(x\sqrt{x-2}\right) = -\frac{3\,(x-4)}{8\,(x-2)^{5/2}}$$

Plots:

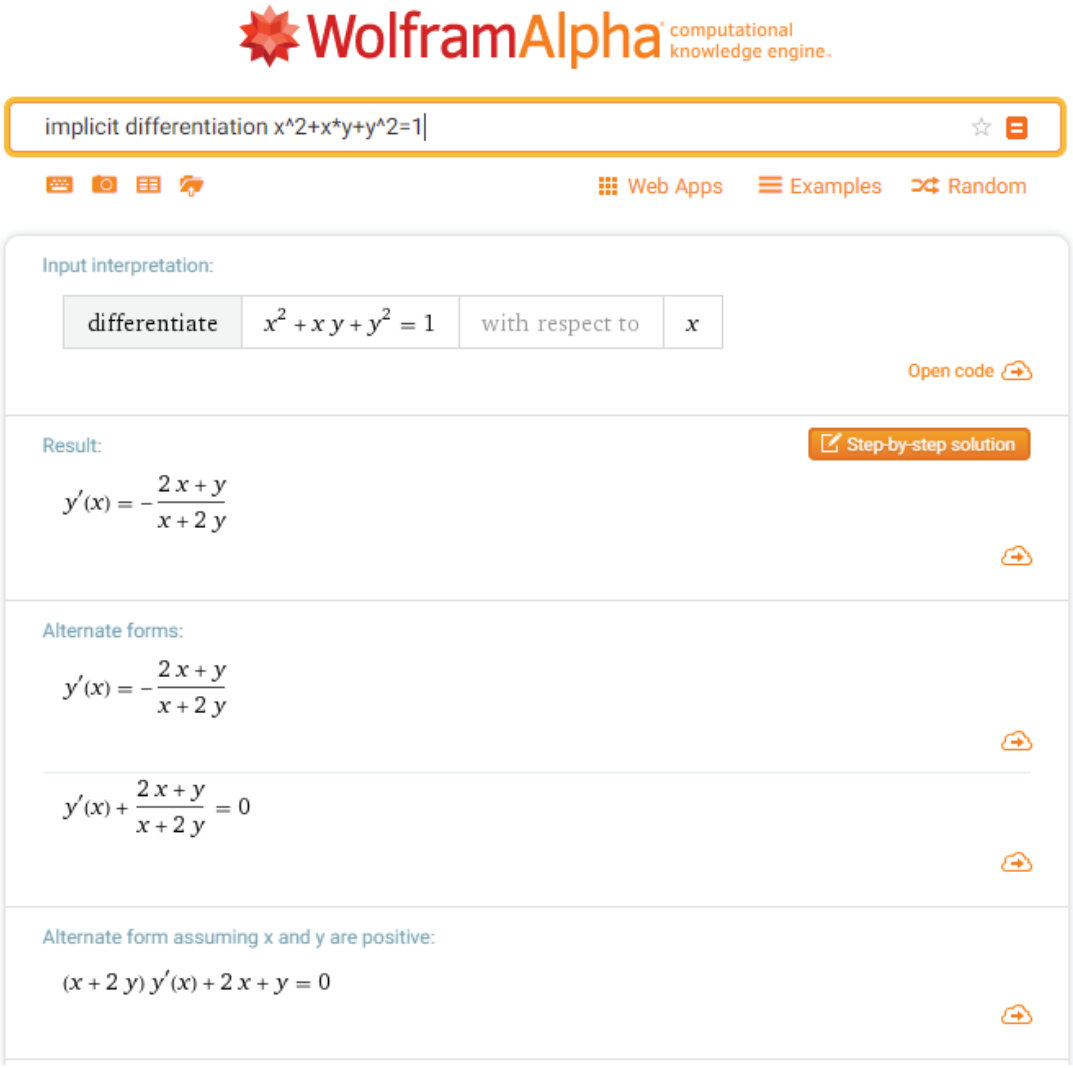
Complex-valued plot



13 page 96


WolframAlpha computational knowledge engine.
Dx arcsin(x/2)
Web Apps
Examples
Random
Derivative:
Step-by-step solution
$\frac{d}{dx}\left(\sin^{-1}\left(\frac{x}{2}\right)\right) = \frac{1}{\sqrt{4-x^2}}$
$\sin^{-1}(x)$ is the inverse sine function
Alternate form:
$\frac{1}{\sqrt{2-x}\,\sqrt{x+2}}$
Roots:
Step-by-step solution
(no roots exist)

2.2 page 101


WolframAlpha computational knowledge engine.
implicit differentiation x^2+x*y+y^2=1
Web Apps
Examples
Random
Input interpretation:
differentiate
$x^2+xy+y^2=1$
with respect to
x
Open code
Result:
Step-by-step solution
$y'(x) = -\frac{2x+y}{x+2y}$
Alternate forms:
$y'(x) = -\frac{2x+y}{x+2y}$
$y'(x) + \frac{2x+y}{x+2y} = 0$
Alternate form assuming x and y are positive:
$(x+2y)\,y'(x) + 2x + y = 0$