w3schools

Tutorials ▾   Exercises ▾   Services ▾   🔍   ◑

☰   SQL   PYTHON   JAVA   PHP   HOW TO   W3.CSS   C   C++   C#   BOOTSTRA

NumPy Hyperbolic Functions

‹ Previous   Next ›

Hyperbolic Functions

NumPy provides the ufuncs `sinh()`, `cosh()` and `tanh()` that take values in radians and produce the corresponding sinh, cosh and tanh values..
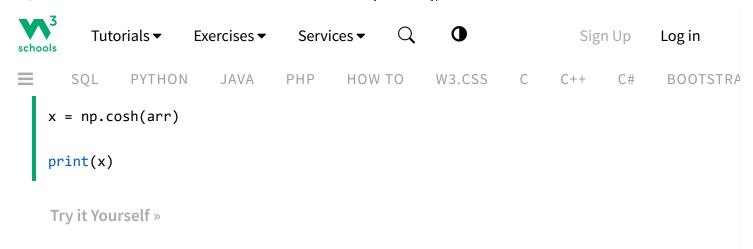
Example

Find sinh value of PI/2:

```python
import numpy as np

x = np.sinh(np.pi/2)

print(x)
```

Try it Yourself »

Example

Find cosh values for all of the values in arr:

```
x = np.cosh(arr)

print(x)
```

Try it Yourself »

Finding Angles

Finding angles from values of hyperbolic sine, cos, tan. E.g. sinh, cosh and tanh inverse (arcsinh, arccosh, arctanh).

Numpy provides ufuncs `arcsinh()`, `arccosh()` and `arctanh()` that produce radian values for corresponding sinh, cosh and tanh values given.
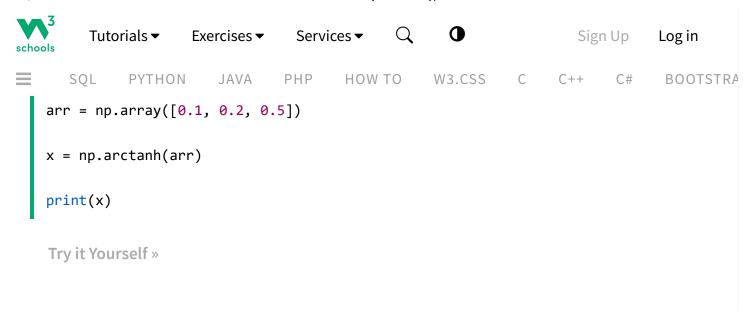
Example

Find the angle of 1.0:

```
import numpy as np

x = np.arcsinh(1.0)

print(x)
```

Try it Yourself »

Angles of Each Value in Arrays

Example

```
arr = np.array([0.1, 0.2, 0.5])

x = np.arctanh(arr)

print(x)
```

Try it Yourself »

Exercise ?

What is a correct syntax for finding the hyperbolic sine value?

○   np.sin()

○   np.sinh()

○   np.sin_h()

Submit Answer »

‹ Previous   Next ›

Track your progress - it's free!

Sign Up   Log in

Tutorials ▾   **Exercises** ▾   **Services** ▾

Sign Up   **Log in**

COLOR PICKER

PLUS   **SPACES**

GET CERTIFIED   **FOR TEACHERS**

W3 schools

Tutorials ▾   Exercises ▾   Services ▾   🔍   ◐   Sign Up   Log in

☰   SQL   PYTHON   JAVA   PHP   HOW TO   W3.CSS   C   C++   C#   BOOTSTRA

Top Tutorials

HTML Tutorial
CSS Tutorial
JavaScript Tutorial
How To Tutorial
SQL Tutorial
Python Tutorial
W3.CSS Tutorial
Bootstrap Tutorial
PHP Tutorial
Java Tutorial
C++ Tutorial
jQuery Tutorial

Top References

HTML Reference
CSS Reference
JavaScript Reference
SQL Reference
Python Reference
W3.CSS Reference
Bootstrap Reference
PHP Reference
HTML Colors
Java Reference
Angular Reference
jQuery Reference

Top Examples

HTML Examples
CSS Examples
JavaScript Examples
How To Examples
SQL Examples
Python Examples
W3.CSS Examples
Bootstrap Examples
PHP Examples
Java Examples
XML Examples
jQuery Examples

Get Certified

HTML Certificate
CSS Certificate
JavaScript Certificate
Front End Certificate
SQL Certificate
Python Certificate
PHP Certificate
jQuery Certificate
Java Certificate
C++ Certificate
C# Certificate
XML Certificate

FORUM   ABOUT   ACADEMY

W3Schools is optimized for learning and training. Examples might be simplified to improve
reading and learning.
Tutorials, references, and examples are constantly reviewed to avoid errors, but we cannot

Sign Up   Log in

SQL   PYTHON   JAVA   PHP   HOW TO   W3.CSS   C   C++   C#   BOOTSTRA