

NumPy Trigonometric Functions

Previous

Next >

Trigonometric Functions

NumPy provides the ufuncs sin(), cos() and tan() that take values in radians and produce the corresponding sin, cos and tan values.

Example

Get your own Python Server

Find sine value of PI/2:

```
import numpy as np
x = np.sin(np.pi/2)
print(x)
```

Try it Yourself »

Example

Find sine values for all of the values in arr:

Convert Degrees Into Radians

By default all of the trigonometric functions take radians as parameters but we can convert radians to degrees and vice versa as well in NumPy.

Note: radians values are pi/180 * degree_values.

Example

Convert all of the values in following array arr to radians:

```
import numpy as np
arr = np.array([90, 180, 270, 360])
x = np.deg2rad(arr)
print(x)
```

Try it Yourself »



Example

Convert all of the values in following array arr to degrees:

```
import numpy as np
arr = np.array([np.pi/2, np.pi, 1.5*np.pi, 2*np.pi])
x = np.rad2deg(arr)
print(x)
```

Try it Yourself »

Finding Angles

Finding angles from values of sine, cos, tan. E.g. sin, cos and tan inverse (arcsin, arccos, arctan).

NumPy provides ufuncs arcsin(), arccos() and arctan() that produce radian values for corresponding sin, cos and tan values given.

Example

Find the angle of 1.0:

```
import numpy as np
x = np.arcsin(1.0)
print(x)
```



Angles of Each Value in Arrays

Example

Find the angle for all of the sine values in the array

```
import numpy as np
arr = np.array([1, -1, 0.1])
x = np.arcsin(arr)
print(x)
```

Try it Yourself »

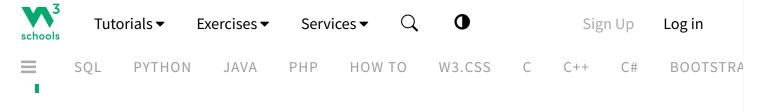
Hypotenues

Finding hypotenues using pythagoras theorem in NumPy.

Example

Find the hypotenues for 4 base and 3 perpendicular:

```
import numpy as np
base = 3
perp = 4
```



Try it Yourself »

Exercise?

What is a correct syntax for converting degrees into radians?

- O np.deg2rad()
- O np.degtorad()
- O np.degrad()

Submit Answer »

< Previous</p>

Next >

Track your progress - it's free!

Sign Up Log in



Tutorials **▼**

Exercises **▼**

Services **▼**



0

Sign Up

Log in

SQL

PYTHON

JAVA

PHP

HOW TO

W3.CSS

C C++

C#

BOOTSTRA



COLOR PICKER













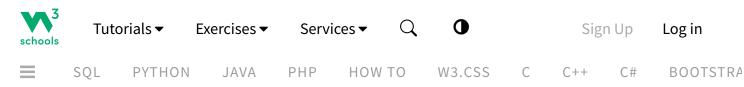


PLUS

SPACES

GET CERTIFIED

FOR TEACHERS



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
¡Query 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

| schools | Tuto | orials ▼ | Exercises ▼ | Servi | ces▼ Q | | • | | Sign Up | | Log in |
|---------|------|---------------------|--------------------|-------|--------|----|--------|---|---------|----|----------|
| | SQL | PYTHON | JAVA | PHP | HOW | ГО | W3.CSS | С | C++ | C# | BOOTSTRA |