NumPy Difference

diff()

```
import numpy as np
arr = np.array([10, 15, 25, 5])
newarr = np.diff(arr)
print(newarr)
```

O/P

[5 10 -20]

```
import numpy as np
arr = np.array([10, 15, 25, 5])
newarr = np.diff(arr, n=2)
print(newarr)
```

O/P

[5 -30]

NumPy LCM Lowest Common or Multiple

Finding LCM

```
import numpy as np
num1 = 4
num2 = 6
x = np.lcm(num1, num2)
print(x)
```

O/P

12

Finding LCM in Arrays

reduce()

```
import numpy as np
arr = np.array([3, 6, 9])
x = np.lcm.reduce(arr)
print(x)
```

O/P

18

2) import numpy as np
arr = np.arange(1,11)
x = np.lcm.reduce(arr)
print(x)

O/P
2520

Numpy GCD

Finding GCD

import numpy as np
num1 = 6
num2 = 9
x = np.gcd(num1, num2)
print(x)

O/P
3

Finding GCD in Array

reduce()

import numpy as np
arr = np.array([20,8,32,36,16])
x = np.gcd.reduce(arr)
print(x)

O/P
4

Trigonometric functions

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

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

1.0

Find the sine values for all the values in array.

```
import numpy as np
arr = np.array([np.pi/2, np.pi/3, np.pi/4, np.pi/5])
x = np.sin(arr)
print(x)
```

[1 0.866 0.707 0.5877]

Convert Degrees Into Radians

Radians value = $\frac{pi}{180}$ x degree_values

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

Radians to Degree

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

[90 180 270 360]

Finding Angles

arcsin( ), arccos( ), arctan( )

```
import numpy as np
x = np.arcsin(1, 0)
print(x)
```

O/P
1.5707 - -

Angles of Each Value in Array

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

O/P — [1.5707 1.57079633 0.10016742]