**8.Universal functions: Arithmetic functions**

array1 = np.array([1, 2, 3, 4])

array2 = np.array([5, 6, 7, 8])

 print("Addition:", np.add(array1, array2))

print("Subtraction:", np.subtract(array1, array2))

print("Multiplication:", np.multiply(array1, array2))

print("Division:", np.divide(array1, array2))

**Output**: [6  8 10 12]

 [-4 -4 -4 -4]

 [ 5 12 21 32]

 [0.2    0.33333333 0.42857143 0.5       ]

**Trigonometric functions**

angles = np.array([0, np.pi/2, np.pi])

print("Sine:", np.sin(angles))

print("Cosine:", np.cos(angles))

print("Tangent:", np.tan(angles))

**Output**:  [0.0000000e+00 1.0000000e+00 1.2246468e-16]

 [ 1.000000e+00  6.123234e-17 -1.000000e+00]

 [ 0.00000000e+00  1.63312394e+16 -1.22464680e-16]

**mean, median, sd ,var**

print("Mean:", np.mean(array1))

print("Median:", np.median(array1))

print("Standard Deviation:", np.std(array1))

print("Variance:", np.var(array1))

**Output:**  2.5

2.5

1.118033988749895

1.25

**Exponential and Logarithmic functions**

print("Exponential:", np.exp(array1))

print("Natural Log:", np.log(array1))

print("Base-10 Log:", np.log10(array1))

**Output:** [ 2.71828183  7.3890561  20.08553692 54.59815003]

 [0.     0.69314718 1.09861229 1.38629436]

 [0.     0.30103 0.47712125 0.60205999]

**Rounding functions**

array3 = np.array([1.23, 4.56, 7.89])

print("Round:", np.round(array3))

print("Floor:", np.floor(array3))

print("Ceil:", np.ceil(array3))

**Output:**  [1. 5. 8.]

[1. 4. 7.]

 [2. 5. 8.]

**9.Comparison functions**

print("Greater:", np.greater(array1, array2))

print("Less:", np.less(array1, array2))

print("Equal:", np.equal(array1, array2))

**Output:**  [False False False False]

 [ True  True  True  True]

 [False False False False]

**10. Bitwise operations**

print(“Bitwise AND:”, np.bitwise\_and(array1, array2))

print(“Bitwise OR:”, np.bitwise\_or(array1, array2))

Print(“Bitwise XOR:”,np.bitwise\_xor(array1,array2))

**Output:**1 2 3 0]

[ 5  6  7 12]