

PRACTICAL-10

USE PYTHON LIBRARIES LIKE MATH'S STATISTICS TO CREATE PROGRAMS FOR SCIENTIFIC CALCULATIONS.

PYTHON CODE:

```
import math
print("Enter 1-trignometric function \n 2- inverse
trignometric function \n 3-power function \n 4-
logarithmic function \n 5- absolute function ")
wish=int(input("enter your choice : "))
if(wish==1):
    a=float(input("Enter the angle in degree : "))
    b=math.sin(a*math.pi/180)
    c=math.cos(a*math.pi/180)
    d=math.tan(a*math.pi/180)
    print(f"sin({a}) = {b}")
    print(f"cos({a}) = {c}")
    print(f"tan({a}) = {d}")
elif(wish==2):
    a=float(input("Enter the number : "))
    b=math.sinh(a)
    c=math.cosh(a)
    d=math.tanh(a)
    print(f"sinh({a}) = {b*180/math.pi} degree")
    print(f"cosh({a}) = {c*180/math.pi} degree")
    print(f"tanh({a}) = {d*180/math.pi} degree")
elif(wish==3):
    x=float(input("Enter x in x^y : "))
    y=float(input("Enter the power of {0}".format(x)))
    c=math.pow(x,y)
    print(f"{x} to the power {y} is {c}")
elif(wish==4):
    b=float(input("Enter the base b : "))
    a=float(input("Enter the number to be taken log to
the base {0} : ".format(b)))
    c=math.log(a,b)
    print(f"{a} log to the base {b} is {c}")
```

```
elif(wish==5):  
    a=float(input("Enter the number : "))  
    c=math.fabs(a)  
    print(f"absolute {a} is {c}")
```

OUTPUT:

Trigonometric function:

```
Enter 1-trigonometric function  
2- inverse trigonometric function  
3-power function  
4- logarithmic function  
5- absolute function  
enter your choice : 1  
Enter the angle in degree : 60  
sin(60.0) = 0.8660254037844386  
cos(60.0) = 0.5000000000000001  
tan(60.0) = 1.7320508075688767  
  
Process finished with exit code 0
```

Inverse trigonometric function:

```
Enter 1-trigonometric function  
2- inverse trigonometric function  
3-power function  
4- logarithmic function  
5- absolute function  
enter your choice : 2  
Enter the number : 5  
sinh(5.0) = 4251.530792427802 degree  
cosh(5.0) = 4251.916848353433 degree  
tanh(5.0) = 57.29057730053125 degree  
  
Process finished with exit code 0
```

Power function:

```
Enter 1-trigonometric function
  2- inverse trigonometric function
  3-power function
  4- logarithmic function
  5- absolute function
enter your choice : 3
Enter x in x^y : 4
Enter the power of 4.0 : 2
4.0 to the power 2.0 is 16.0

Process finished with exit code 0
```

Logarithmic function:

```
Enter 1-trigonometric function
  2- inverse trigonometric function
  3-power function
  4- logarithmic function
  5- absolute function
enter your choice : 4
Enter the base b : 2
Enter the number to be taken log to the base 2.0 : 8
8.0 log to the base 2.0 is 3.0

Process finished with exit code 0
```

Absolute function:

```
Enter 1-trigonometric function
  2- inverse trigonometric function
  3-power function
  4- logarithmic function
  5- absolute function
enter your choice : 5
Enter the number : -5.7
absolute -5.7 is 5.7

Process finished with exit code 0
```

