Mathematical Operations

```
In [ ]: print(1+3)
```

```
In [ ]: print(1*3)
```

```
In [ ]: print(3**2)
```

```
In [ ]: print(5/2)
```

```
In [ ]: 10+5
```

```
In [ ]: 10%4
```

```
In [ ]: 11%8
```

Relational Operations

```
In [ ]: 45>20
```

```
In [ ]: 23==34
```

```
In [ ]: 32<=32
```

```
In [ ]: 24!=45
```

Logical Operations

```
In [ ]: 3>2 and 3!=4
```

```
In [ ]: 3==4 and 5<7
```

```
In [ ]: 3==4 or 5<7
```

```
In [ ]: 3==4 or 5>7
```

```
In [ ]: not 3==4
```

Primitive Data Types

```python
In [ ]: type(2)
```

```python
In [ ]: type(3.123)
```

```python
In [ ]: type("Dog")
```

```python
In [ ]: type(True)
```

```python
In [ ]: type(False)
```

Python Variables

```python
In [ ]: x=20
        y=30
        print(x+y)
```

```python
In [ ]: x=100
        print(x+y)
```

```python
In [ ]: p="Today is a beatiful day!!"
        print(p)
```

Python Comments

```python
In [ ]: #This is the first number
        num1=20

        #This is the second number
        num2=30

        print(num1+num2)
```

Compound Data Types

Lists

Creating Lists

```python
In [ ]: L=[23,33,22,23,21,23]
        print(L)
```

```python
In [ ]: S=["Cat","Dog","Cow"]
        print(S)
```

```python
In [ ]: K=["Cat",23,33,43,True]
        print(K)
```

```python
In [ ]: L=[12,22,23,21,[23,33,45,54],"Man"]
        print(L)
```

Indexing Lists

```python
In [ ]: L=[4,5,3,6,8,3,7,9,12,26,43]
```

```python
In [ ]: L[0]
```

```python
In [ ]: L[3]
```

```python
In [ ]: L[-1]
```

Dictionaries

```python
In [ ]: a={"a":10,"b":20}
        a
```

```python
In [ ]: d={"Name":["Sam","Kane","Jane"],"Age":[23,33,45]}
        d
```

Accessing elements

```python
In [ ]: d={"Name":["Sam","Kane","Jane"],"Age":[23,33,45]}
```

```python
In [ ]: d["Name"]
```

Flow Control Structures

Selections

```
In [ ]:  x=20

         if x>10:
             print("X is greater than 10")
```

```
In [ ]:  x=20

         if x<10:
             print("X is less than 10")

         #Here no output is given
```

```
In [ ]:  x=20

         if x>10:
             print("X is greater than 10")
         else:
             print("X is less than 10")
```

```
In [ ]:  x=5

         if x>10:
             print("X is greater than 10")
         else:
             print("X is less than 10")
```

```
In [ ]:  mark=75

         if mark>=80:
             Grade="A"
         elif mark>=65:
             Grade="B"
         elif mark>=50:
             Grade="C"
         else:
             Grade="Repeat"

         print(Grade)
```

Repetitions (Loops)

For loop

```
In [ ]:  L=[11,22,33,44,55,66,77]
```

```
In [ ]:  for j in L:
             print(j)
```

```python
for i in L:
    print(2*i)
```

```python
for i in L:
    if i%2==0:
        print(i)
```

While loop

```python
x=1

if x<5:
    print(2*x)
    x=x+1
```

```python
x=1

while x<5:
    print(2*x)
    x=x+1
```

Functions (Methods)

```python
def wish_birthday():
    print("Happy Birthday!!!")
```

```python
wish_birthday()
```

```python
wish_birthday()
```

Arguments should be given when there are inputs

```python
def add_vals(a,b):
    print(a+b)
```

```python
add_vals(20,10)
```

```python
add_vals(-10,30)
```

Return releases the values out

```python
def add_val2(a,b):
    return a+b
```

```
In [ ]: x=add_val2(2,5)
        x
```

```
In [ ]: 3+add_val2(10,20)
```

```
In [ ]:
```