Arithmetic Operators & Order of Precedence

In this notebook we cover

1. the arithmetic operators in Python
2. simple and complex arithmetic expressions
3. Operator precedence (PEMDAS)
4. Introduction to the print() statement
5. the format() function

Arithmetic Operators

+ Addition

- Subtraction

***** Multiplication

/ Division

// Integer division

% Modulo

****** Exponentiation

In [6]:

```
''' Arithmetic expressions in Python can be written by combining numeric constants or
variables together with arithmetic operators.
'''

x = 10
y = 5

z = x + y
print('x + y', z)

z = x - y
print('x - y =', z)

z = x * y
print ('x * y =', z)

z = x/y
print('x / y =', z)

z = x//y
print('x // y =', z)

z = x % y
print('x % y =', z)

z = x**y
print('x ** y =', z)
```

```
x + y 15
x - y = 5
x * y = 50
x / y = 2.0
x // y = 2
x % y = 0
x ** y = 100000
```

In [7]:

```
'''
Order of operation is as follows:
Parentheses (P), Exponentiation (E), Multiplication (M), Division (D), Addition (A), Subtraction (
```

```
S) = PEMDAS.
Anything enclosed in parentheses is evaluated first.  The exponentiation (**) operator is evaluate
d next.
The multiplication, division, integer division and modulo operators all have the same priority and
are evaluated next.
If two or more of these operators are present in an expression, they are evaluated from left to ri
ght.
Finally, the addition and subtraction operators are evaluated.
'''
x = 2
y = x * 3 + 8 - 25//4
print('x=',x,'y=',y)
```

```
x= 2 y= 8
```

In [8]:

```
'''
Evaluate the following expression
'''
x = 2
y = x ** 3 + 8 - 25//4
print('x=',x,'y=',y)
```

```
x= 2 y= 10
```

In [9]:

```
'''
Evaluate the following expression
'''
x = 2
y = x ** (3 + 8) - 25//4
print('x=',x,'y=',y)
```

```
x= 2 y= 2042
```

In [10]:

```
'''
Evaluate the following expressions.
'''
i1 = 2
i2 = 5
i3 = -3
d1 = 2.0
d2 = 5.0
d3 = -0.5
r1 = 3 * (d1 + d2) * (d1 - d3)
r2 = (d1 + d2 + d3) / 3
r3 = d1 + d2 + (d3 / 3)
r4 = i1 // i2 + i3
r5 = i1 / i2 + i3
print(r1)
print(r2)
print(r3)
print(r4)
print(r5)
```

```
52.5
2.1666666666666665
6.833333333333333
-3
-2.6
```