

1. A class is an interface of sorts describing the type of a particular thing, whereas an object is a specific instance/example of that class. The class has states and functionalities and an object describes the particular values of those states and their individual functionalities with respect to the object.
2. A member variable is a state relative to the particular class where it is defined whereas a regular variable is a variable without being member state of any class.
3. A member function is a function relative to the particular class where it is defined whereas a regular variable is a function without being member state of any class. A member function has to be called with a class object whereas a regular function can be called independently. Member functions require a self argument in order to refer to the particular object that is calling it. This ensures that the proper object is calling the function.
4. Inheritance expresses the ISA relationship. Composition expresses the HAS-A relationship. ISA means that one class essentially is a type of the base class, with additional characteristics whereas a HAS-A relationship applies only to one class in relationship to its member variables.
5. The purpose of the constructor is to instantiate an object and initialize its member variables.
6. `__init__` is used to call a constructor. The constructor is called only once during the lifetime of an object.
7.

```

num = 0
for i in range (1.0:1.0:11:0):
for j in range (1.0:1.0:11:0):
    P[num] = Point2D(i, j)
    num = num + 1

```
8.

```

def print(self):
    print('{}{}'.format(self.x).format(self.y))

```
9.

```

class MyPoint2D(Point2D):
    def __init__(Point2D):
        Point2D.__init__(self, x, y)
    def get_max_coord(self):
        if (self.x > self.y):
            return self.x
        else:
            return self.y
    def get_min_coord(self):
        if (self.x < self.y):
            return self.x
        else:
            return self.y

```