Assignment 3

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1- Write a lambda expression to get the product of two numbers ##### Run test for expression(5,6) Output:30

```
[10]: multi = lambda x,y: x*y              #use lambda insted of creating function
      print ("output=")
      print (multi(5,6))
```

```
output=
30
```

2- Write a function to get the area of a circle from the radius. #### Run test for function(10) Output:314.1592653589793

```
[11]: from math import pi                                                          ⎵
        ↪#import pi conestant from module
      r = float(input("Input the radius of the circle : "))                        ⎵
        ↪#Get radius from user
      area = pi * r ** 2                                                           ⎵
        ↪#calulate area of circle
      print("The area of the circle with radius " + str(r) + " is: " + str(area))⎵
        ↪#show result
```

```
Input the radius of the circle :   10

The area of the circle with radius 10.0 is: 314.1592653589793
```

3- Build a simple calculator which can: add, subtract, multiply, divide. #### Run test for function(2,5,'d') Output: 0.4

```
[12]: def my_calc(fnum,Snum,Opr):                          #define function
          if Opr == 'a':                                   #use if to check⎵
        ↪value and print base on condition
              print (fnum+Snum)
          elif Opr == 's':
              print (fnum-Snum)
          elif Opr == 'm':
              print (fnum*Snum)
          elif Opr == 'd':
              print (fnum/Snum)
```

```
print ("output=")
my_calc(2,5,'d')
```

```
output=
0.4
```

4- Define a class named Rectangle which can be constructed by a length and width. #### Run test for r = Rectangle(5,10)r.area() Output: 50

```
[13]: class Rectangle:                                                #define␣
      ↪class with 2 value
          def __init__(self, Lnum, Wnum):
              self.Lnum = Lnum
              self.Wnum = Wnum

          def area(self):                                              ␣
      ↪#calulate area
              return self.Lnum*self.Wnum


      shape1=Rectangle(5,10)
      print("Area of the rectangle is: ", shape1.area())               #show␣
      ↪result
```

```
Area of the rectangle is:  50
```

5- Define a class named Shape and its subclass Square #### Run test for:s = Square('square',5)print(s.area())print(s.describe()) Output: The area is: 25This is a: square

```
[14]: class Shape:
          def __init__(self, name):
              self.name = name

          def area(self):
              return 0


      class Square(Shape):
          def __init__(self, length, name):
              super().__init__(name)
              self.length = length

          def area(self):
              return self.length ** 2

          def describe(self):
              print(f"This shape is a {self.name}.")
```

```python
square = Square(5, "Square")
print(f"Area of the square is: {square.area()}")  # Output: Area of the square:␣
    ↪16
square.describe()  # Output: This shape is a Square
```

```
Area of the square is: 25
This shape is a Square.
```