

mavanvu-Assignment 3

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1 MAI VAN VU

1.1 Assignment 3

1.1.1 13/02/2025

Part 1

```
[2]: product = lambda x, y: x * y
print(product(5, 6))
```

30

Part 2

```
[22]: import math
def circle_area(radius):
    return math.pi * radius ** 2
print(circle_area(10))
```

314.1592653589793

Part 3

```
[35]: def calculator(a, b, operation):
    if operation == 'a':
        return a + b
    elif operation == 's':
        return a - b
    elif operation == 'm':
        return a * b
    elif operation == 'd':
        return a / b if b != 0 else "Error: Division by zero"
    else:
        return "Invalid operation"

print(calculator(2, 5, 'd'))
```

0.4

Part 4

```
[8]: class Rectangle:
    def __init__(self, length, width):
        self.length = length
        self.width = width

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

r = Rectangle(5, 10)
print(r.area())
```

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part 5

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

    def area(self):
        return 0
    def describe(self):
        return f"This is a: {self.name}"

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

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

s = Square('square', 5)
print("The area is:")
print(s.area())
print(s.describe())
```

The area is:

25

This is a: square

```
[ ]:
```