Part One

Hello world

In [ ]:
```
var = "Hello, world!"
print("Length of var: ", len(var))
print("Extracted var: ", var[:7])
```

```
Length of var:  13
Extracted var:  Hello,
```

Different Types

In [ ]:
```
print(type(1))
print(type(1.0))
print(type("1"))
```

```
<class 'int'>
<class 'float'>
<class 'str'>
```

These differ in how they can be used in a program. You cannot concatonate a string with an integer or a float. Likewise, you cannot add a string to either a int or a float

Area of a circle

In [ ]:
```
from math import pi

radius = 5

area = pi * (radius * radius)

area = round(area, 2)
```

```
print(radius)
print('Area is: ' + str(area))
```

```
5
Area is: 78.54
```

Reversed numbers

In [ ]:
```
for i in reversed(range(10)):
    print(i)
```

```
9
8
7
6
5
4
3
2
1
0
```

Odd numbers between 9 and 22

In [ ]:
```
print("Odd numbers between 9 and 22")
for i in range(9, 22):
    if i % 2 != 0:
        print(i)
```

```
Odd numbers between 9 and 22
9
11
13
15
17
19
21
```

Greater than or less than

In [ ]:
```
v = int(input("Enter an integer to check with the less or greater than function: "))
print(v)

if v > 8:
    if v == 10:
        print("Value is 10")
    else:
        print("Greater than 8")

if v < 9:
    print("Less than 9")
```

```
10
Value is 10
```

Length of a string

In [ ]:
```
def get_length(string):
    return len(string)

string = input('Enter a string you would like to know the length of: ')

print(string)
get_length(string)
```

```
hello everyone!
```

Out[ ]: 15

Part 2: Object Oriented Programming

In [ ]:
```
class Triangle:
    def __init__(self, base, height):
        self.base = base
        self.height = height

    def getBase(self):
        return self.base
```

```
    def setBase(self, b):
        self.base = b

    def getHeight(self):
        return self.height

    def setHeight(self,h):
        self.height = h

    def Area(self):
        area = (self.height * self.base)/2
        return area
```

In [ ]:
```
test = Triangle(2, 3)
```

In [ ]:
```
test.getBase()
```

Out[ ]: 2

In [ ]:
```
test.getHeight()
```

Out[ ]: 3

In [ ]:
```
test.setHeight(23)
test.getHeight()
```

Out[ ]: 23

In [ ]:
```
test.setBase(49)
test.getBase()
```

Out[ ]: 49

In [ ]:
```
test.Area()
```

Out[ ]: 563.5