```
#1. Variables (camelCase and snake_case)
# camelCase
studentName = "Rahul"
studentAge = 16

# snake_case
student_grade = "10th"
student_score = 92.5

print(studentName, studentAge)
print(student_grade, student_score)
```

```
Rahul 16
10th 92.5
```

```
# 2. Constant and Circumference Calculation
PI = 3.14159
radius = 7
circumference = 2 * PI * radius
print("Circumference:", circumference)
```

```
Circumference: 43.98226
```

```
#3. List Operations
items = ['pen', 'book', 'pencil', 'eraser', 'sharpener']
print("First item:", items[0])
print("Last item:", items[-1])

items[2] = 'marker'
items.append('scale')
print("Updated List:", items)
```

```
First item: pen
Last item: sharpener
Updated List: ['pen', 'book', 'marker', 'eraser', 'sharpener', 'scale']
```

```
#4. Sum of Two Numbers
num1 = 15
num2 = 25
total = num1 + num2
print("Sum:", total)
```

```
Sum: 40
```

```
#5. Area of a Circle
PI = 3.14159
radius = float(input("Enter radius: "))
area = PI * radius * radius
print("Area of Circle:", area)
```

```
Enter radius: 11
Area of Circle: 380.13239
```

```
#6. Area of a Rectangle
length = float(input("Enter length: "))
width = float(input("Enter width: "))
area = length * width
print("Area of Rectangle:", area)
```

```
Enter length: 11
Enter width: 12
Area of Rectangle: 132.0
```

```
#7. Area of a Triangle
base = float(input("Enter base: "))
height = float(input("Enter height: "))
area = (base * height) / 2
print("Area of Triangle:", area)
```

```
Enter base: 11
Enter height: 12
Area of Triangle: 66.0
```

```
#8. Simple Calculator
a = float(input("Enter first number: "))
b = float(input("Enter second number: "))

print("Addition:", a + b)
print("Subtraction:", a - b)
print("Multiplication:", a * b)
print("Division:", a / b if b != 0 else "Cannot divide by zero")
```

```
Enter first number: 12
Enter second number: 12
Addition: 24.0
Subtraction: 0.0
Multiplication: 144.0
Division: 1.0
```

```
#9. Assignment Operators
x = 10
print("Initial:", x)
x += 5
print("After += 5:", x)
x -= 3
print("After -= 3:", x)
x *= 2
print("After *= 2:", x)
x /= 4
print("After /= 4:", x)
```

```
Initial: 10
After += 5: 15
After -= 3: 12
After *= 2: 24
After /= 4: 6.0
```

```
#10. Increment/Decrement Operators
counter = 10
print("Initial:", counter)
counter += 1
print("After Increment:", counter)
counter -= 1
print("After Decrement:", counter)
```

```
Initial: 10
After Increment: 11
After Decrement: 10
```

```
#11. Comparison Operators
a = 10
b = 20
print("Equal:", a == b)
print("Not Equal:", a != b)
print("Greater:", a > b)
print("Less:", a < b)
print("Greater or Equal:", a >= b)
print("Less or Equal:", a <= b)
```

```
Equal: False
Not Equal: True
Greater: False
Less: True
Greater or Equal: False
Less or Equal: True
```

```
#12. Logical Operators
x = True
y = False
print("x and y:", x and y)
print("x or y:", x or y)
print("not x:", not x)
```

```
x and y: False
x or y: True
not x: False
```

```
#13. Swap Variables
# Using third variable
a = 5
b = 10
temp = a
a = b
b = temp
print("After first swap:", a, b)

# Without third variable
a, b = b, a
print("After second swap:", a, b)
```

```
After first swap: 10 5
After second swap: 5 10
```

```
#14. Average of 3 Numbers
n1 = float(input("Enter first number: "))
n2 = float(input("Enter second number: "))
n3 = float(input("Enter third number: "))
average = (n1 + n2 + n3) / 3
print("Average:", average)
```

```
Enter first number: 11
Enter second number: 12
Enter third number: 45
Average: 22.666666666666668
```

```
#15. Compound Arithmetic Operation
a, b, c, d = 10, 30, 12, 3
result = (a + b) * c / d
```

```
print("Result:", result)
```

```
Result: 160.0
```

```
#16. 10th Grade Marks, Total & Average
tamil = int(input("Enter Tamil marks: "))
english = int(input("Enter English marks: "))
maths = int(input("Enter Maths marks: "))
science = int(input("Enter Science marks: "))
social = int(input("Enter Social marks: "))

total = tamil + english + maths + science + social
average = total / 5

print("Total Marks:", total)
print("Average Marks:", average)
```

```
Enter Tamil marks: 99
Enter English marks: 67
Enter Maths marks: 88
Enter Science marks: 66
Enter Social marks: 77
Total Marks: 397
Average Marks: 79.4
```

```
3
```