**Lab 1. Variables, Assignment, Types and Operators**

**1.** Which of the following are acceptable variable names for Python?

(a) xyzzy – this is a good practice naming

(b) 2ndVar – a variable name cannot start with numbers

(c) rich&bill – the only character to be used is \_

(d) long name – cannot have white space between the names, the programme will give error.

(e) good2go – this a good practice naming.

**2.** Give the values printed by the following program for each of the labelled lines.

A screenshot of a computer program

Description automatically generated

int\_a = 27

int\_b = 5

int\_a = 6

print(int\_a) # Line 1

print(int\_b + 5) # Line 2

print(int\_b) # Line 3

(a) What is printed by Line 1? It prints out 27.

(b) What is printed by Line 2? It prints out the added value 10.

(c) What is printed by Line 3? It prints the initial value 5 and not the added value done on previous print statement.

A screen shot of a computer

Description automatically generated

**3.** Give the values printed by the following program for each of the labelled lines, and

answer the associated questions.

A screen shot of a computer program

Description automatically generateda\_float = 2.5

a\_int = 7

b\_int = 6

print(a\_int / b\_int) # Line 1

print(a\_int // a\_float) # Line 2

print(a\_int % b\_int) # Line 3

print(int(a\_float)) # Line 4

print(float(a\_int)) # Line 5

(a) Line 1: What is printed? What is its type? 1.16666… is printed out as a float.

(b) Line 2: What is printed? What is its type? 2.0 is printed out as a float.

(c) Line 3: What is printed? What is its type? Reminder of 1 is printed out as an integer.

(d) Line 4: What is printed? What is its type? Float 2.5 is printed out as an integer 2.

(e) Line 5: What is printed? What is its type? An integer 7 is printed out as a float 7.0.

A screen shot of a computer

Description automatically generated

**4.** Give the values printed by the following program for each of the labelled lines.

A screenshot of a computer program

Description automatically generated

a\_int = 10

b\_int = 3

c\_int = 2

print(a\_int + b\_int \* c\_int) # Line 1

print( (a\_int + b\_int) \* c\_int ) # Line 2

print(b\_int \*\* c\_int) # Line 3

(a) What is printed by Line 1? All the values are calculated together printing 16, with \* taking precedence first.

(b) What is printed by Line 2? The values in () take precedence before any valued calculated printing out 26.

(c) What is printed by Line 3? The value 9 is printed out.

A screen shot of a computer

Description automatically generated

**5.** Change the program below to calculate and print the area of a rectangle instead.

A black screen with white text

Description automatically generated

from math import pi

r = 12

area = pi \* r \*\* 2

print("The area of a circle with radius", r, "is", area)

A screen shot of a computer

Description automatically generated

A black screen with white text

Description automatically generatedr = 8

q = 4

area = r \* q \*\* 2

print("The area of a rectangle with radius", r, “and”, q, "is", area)

A screen shot of a computer

Description automatically generated